NC/QC/YPD/2023-24/NM-2-C1 Date: 03-06-2023

1. TEST REPORT ON CEMENT:

Sub: Testing of 53 Grade Cement Sample (IS 12269-1987).
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

PHYSICAL TESTS ON CEMENT

Grade * : 53,
Type * : O.P.C

TABLE 1.1:

SL No	Name of Test	Test Results	Requirements as per IS 8112-1989
1	Initial setting time	**159 min**	Shall not be less than 30 min
2	Final setting time	**271 min**	Shall not be more than 600 min
3	Fineness (by dry sieving on IS 90 micron sieve)	**2.04 %**	Not to exceed 10.0%
4	Soundness test(by Le-Chatelier's method)	**1.93 mm**	Shall not be more than 10 mm
5	Compressive strength a) 3 days (average of three results)	**28.51 N/Sq mm**	Shall not be less than 27 N/Sqmm

Sample Collected Site : Nitte Meenakshi College Road From Railway track LHS Ch:1548.20m to 1578.20m

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NC/QC/YPD/2023-24/NM-2-PCC1 **Date: 03-06-2023**

1. TESTING OF COARSE AND FINE AGGREGATES:

Sub: Testing of Coarse and Fine aggregates to be used for bed concrete.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}

Ref.: Material testing/PMC/21-22,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

1. COARSE AGGRGATES TABLE - SIEVE ANALYSIS:

IS Sieve Size, mm	Percentage passing	Requirements as per IS 383-1970 (Reaffirmed on 2007) % Passing	
	40 mm Sample	Single size	Graded
40mm	100.00	85-100	90 – 100
20mm	61.30	0 -20	30- 70
10mm	32.80	0 -5	10- 35
4.75mm	2.50	------	0- 5

2. FINE AGGREGATES TABLE - SIEVE ANALYSIS:

IS Sieve Size, mm	Percentage Passing	Specification as Per IS: 383-1970(Reaffirmed 2002) Percentage Passing			Remarks
		Zone-I	Zone-II	Zone -III	
04.75	95.40	90-100	90-100	90-100	The Sample Conforms to Grading **Zone-II**
02.36	79.50	60-95	75-100	85-100	
01.18	68.10	30-70	55-90	75-100	
600.mic	50.60	15-34	35-59	60-79	
300.mic	24.30	5-20	8-30	12-40	
150.mic	8.70	0-10	0-10	0-10	

Sample Collected Site : Nitte Meenakshi College Road From Railway track LHS Ch:1548.20m to 1578.20m

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Asst. Executive Engineer
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Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-PCC2

Date: 05-06-2023

1. TESTING OF COARSE AND FINE AGGREGATES:

Sub: Testing of Coarse and Fine aggregates to be used for bed concrete.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

1. COARSE AGGRGATES TABLE - SIEVE ANALYSIS:

IS Sieve Size, mm	Percentage passing	Requirements as per IS 383-1970 (Reaffirmed on 2007) % Passing	
	40 mm Sample	Single size	Graded
40mm	100.00	85-100	90 – 100
20mm	66.40	0 -20	30- 70
10mm	25.90	0 -5	10- 35
4.75mm	3.60	-----	0- 5

2. FINE AGGREGATES TABLE - SIEVE ANALYSIS:

IS Sieve Size, mm	Percentage Passing	Specification as Per IS: 383-1970(Reaffirmed 2002) Percentage Passing			Remarks
		Zone-I	Zone-II	Zone -III	
04.75	98.00	90-100	90-100	90-100	The Sample Conforms to Grading **Zone-II**
02.36	91.40	60-95	75-100	85-100	
01.18	86.10	30-70	55-90	75-100	
600.mic	48.70	15-34	35-59	60-79	
300.mic	23.50	5-20	8-30	12-40	
150.mic	8.80	0-10	0-10	0-10	

Sample Collected Site : Nitte Meenakshi College Road From Railway track RHS Ch:1593.60m to 1623.60m

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-CE1 Date: 06-06-2023

1. TEST REPORT ON CEMENT:

Sub: Testing of 53 Grade Cement Sample (IS 12269-1987).
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

PHYSICAL TESTS ON CEMENT

Grade * : 53,
Type * : O.P.C

TABLE 1.1:

SL No	Name of Test	Test Results	Requirements as per IS 8112-1989
1	Initial setting time	**148 min**	Shall not be less than 30 min
2	Final setting time	**265 min**	Shall not be more than 600 min
3	Fineness (by dry sieving on IS 90 micron sieve)	**1.82 %**	Not to exceed 10.0%
4	Soundness test(by Le-Chatelier's method)	**1.79 mm**	Shall not be more than 10 mm
5	Compressive strength a) 3 days (average of three results)	**28.89 N/Sq mm**	Shall not be less than 27 N/Sqmm

Sample Collected Site : Nitte Meenakshi College Road From Railway track LHS Ch:1548.20m to 1578.20m

Executive Engineer
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NEWZEN CONSULTANT BANGALORE, #304, First floor, 6th Cross,Gidadakonenahalli, Viswaneedam Post, Bangalore-560091. CELL NO: +91 8792620231, 080 23240187 EMAIL:newzen576@gmail.com

NC/QC/YPD/2023-24/NM-2-FA1

Date: 06-06-2023

1. TESTING OF FINE AGGREGATES :

Sub: Testing of Fine Aggregates.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TABLE - 1.1 : SIEVE ANALYSIS

IS Sieve Size,mm	Percentage Passing	Specification as Per IS: 383-1970(Reaffirmed 2002) Percentage Passing			Remarks
		Zone-I	Zone-II	Zone -II	
04.75	**98.10**	90-100	90-100	90-100	The Sample Conforms to Grading **Zone-II**
02.36	**79.50**	60-95	75-100	85-100	
01.18	**64.80**	30-70	55-90	75-100	
600. mic	**36.40**	15.34	35-59	60-79	
300.mic	**22.50**	5-20	8-30	12-40	
150.mic	**8.90**	0-10	0-10	0-10	

TABLE 1.2 ;

Sl No	Test Conducted	Sample	Results	Requirements as Per IS. Specification IS :383-1970 (Reaffirmed 2002)
1	Bulking of Sand	001	**17.88 %**	-----
2	Silt Content	----	**0.68 %**	Not more than 8%
3	Specific Gravity	----	**2.62**	-------

Sample Collected Site : Nitte Meenakshi College Road From Railway track LHS Ch:1548.20m to 1578.20m

Executive Engineer, Yelahanka Division, BBMP, Bangalore - 92

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NC/QC/YPD/2023-24/NM-2-CA1 **Date: 06-06-2023**

1. TESTING OF COARSE AGGREGATES (20 mm):

Sub: Testing of Construction Materials.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

Table - 1.1 : SIEVE ANALYSIS :

IS Sieve Size, mm	Percentage passing	Requirements as per IS 383-1970 (Reaffirmed on 2002) % Passing	
	20 mm Sample	Single size	Graded
40 mm	**100.00**	100.00	100.00
20 mm	**98.60**	85-100	90 – 100
10 mm	**51.00**	0 - 20	25 – 55
4.75 mm	**6.40**	0 - 5	0 - 10

TABLE 1.2 :

SL No	Test conducted	Results	Requirements as per IS:383-1970 & Tests Conforms to IS 2386(Part I to IV) – 1963 (Reaffirmed on 2002)
1.	Flakiness Index	**23.79%**	Not to exceed 25 %
2.	Crushing value	**28.15%**	Not to exceed 45 % for concrete other than for wearing surfaces and 30% for concrete for wearing surfaces

Sample Collected Site : Nitte Meenakshi College Road From Railway track LHS Ch:1548.20m to 1578.20m

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NC/QC/YPD/2023-24/NM-2-S1 **Date: 06-06-2023**

1. TEST REPORT ON REINFORCEMENT STEEL:

Sub: Testing of Reinforcement Steel of diameter 10 and 12 mm **TMT Steel.**
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TABLE – 1

SL No	Details	For 10 mm		For 12 mm	
		Test Results	Min Req. as per IS 1786-2008	**Test Results**	Min Req. as per IS 1786-2008
01	Observed diameter of bar	**10.0 mm**	10.0 mm	**12.0 mm**	12.0 mm
02	Observed Wt/m Length **Kg/m**	**0.621**	0.567	**0.894**	0.834
03	Proof stress/Yield stress, fy , **N/mm^2**	**539.0**	500.0	**547.0**	500.0
04	Bend/ Re bend Test	**Ok**	---	**Ok**	---
05	Percentage of Elongation, %	**19.60**	16.00	**20.60**	16.00
06	Ultimate Tensile Strength **N/mm^2**	**634.0**	565.0	**628.0**	565.0

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NEWZEN CONSULTANT BANGALORE, #304, First floor, 6th Cross,Gidadakonenahalli, Viswaneedam Post, Bangalore-560091. CELL NO: +91 8792620231, 080 23240187 EMAIL:newzen576@gmail.com

NC/QC/YPD/2023-24/NM-2-CB1 **Date: 14-06-2023**

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (for 07days Compressive Strength).
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	07-06-23	14-06-23	07	22500	360	16.00	**15.63**
	002	"	"	"	"	345	15.33	
	003	"	"	"	"	350	15.56	

Sample Collected Site : Nitte Meenakshi College Road From Railway track LHS Ch:1548.20m to 1578.20m

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NEWZEN CONSULTANT BANGALORE, #304, First floor, 6th Cross,Gidadakonenahalli, Viswaneedam Post, Bangalore-560091. CELL NO: +91 8792620231, 080 23240187 EMAIL:newzen576@gmail.com

NC/QC/YPD/2023-24/NM-2-CB2 **Date: 15-06-2023**

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (for 07days Compressive Strength).
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	08-06-23	15-06-23	07	22500	355	15.78	**16.07**
	002	‘’	“	‘’	“	370	16.44	
	003	‘’	“	‘’	“	360	16.00	

Sample Collected Site : Nitte Meenakshi College Road

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NC/QC/YPD/2023-24/NM-2-CB3 Date: 16-06-2023

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (for 07days Compressive Strength).
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm
Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	09-06-23	16-06-23	07	22500	350	15.56	**15.93**
	002	"	"	"	"	365	16.22	
	003	"	"	"	"	360	16.00	

Sample Collected Site : Nitte Meenakshi College Road

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NEWZEN CONSULTANT BANGALORE, #304, First floor, 6th Cross,Gidadakonenahalli, Viswaneedam Post, Bangalore-560091. CELL NO: +91 8792620231, 080 23240187 EMAIL:newzen576@gmail.com

NC/QC/YPD/2023-24/NM-2-CB4

Date: 17-06-2023

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (for 07days Compressive Strength).
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm
Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	10-06-23	17-06-23	07	22500	340	15.11	**15.41**
	002	"	"	"	"	345	15.33	
	003	"	"	"	"	355	15.78	

Sample Collected Site : Nitte Meenakshi College Road

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NEWZEN CONSULTANT BANGALORE, #304, First floor, 6th Cross,Gidadakonenahalli, Viswaneedam Post, Bangalore-560091. CELL NO: +91 8792620231, 080 23240187 EMAIL:newzen576@gmail.com

NC/QC/YPD/2023-24/NM-2-CB5 **Date: 19-06-2023**

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (for 07days Compressive Strength).
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	12-06-23	19-06-23	07	22500	335	14.89	**14.96**
	002	"	"	"	"	330	14.67	
	003	"	"	"	"	345	15.33	

Sample Collected Site : Nitte Meenakshi College Road

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

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NEWZEN CONSULTANT BANGALORE, #304, First floor, 6th Cross,Gidadakonenahalli, Viswaneedam Post, Bangalore-560091. CELL NO: +91 8792620231, 080 23240187 EMAIL:newzen576@gmail.com

NC/QC/YPD/2023-24/NM-2-CB6 **Date: 20-06-2023**

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (for 07days Compressive Strength).
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	13-06-23	20-06-23	07	22500	340	15.11	**14.59**
	002	‘’	“	‘’	“	320	14.22	
	003	‘’	“	‘’	“	325	14.44	

Sample Collected Site : Nitte Meenakshi College Road

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NEWZEN CONSULTANT BANGALORE, #304, First floor, 6th Cross,Gidadakonenahalli, Viswaneedam Post, Bangalore-560091. CELL NO: +91 8792620231, 080 23240187 EMAIL:newzen576@gmail.com

NC/QC/YPD/2023-24/NM-2-CB7 Date: 21-06-2023

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (for 07days Compressive Strength).

{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}

Ref.: Material testing/PMC/21-22,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	14-06-23	21-06-23	07	22500	350	15.56	**15.85**
	002	"	"	"	"	365	16.22	
	003	"	"	"	"	355	15.78	

Sample Collected Site : Nitte Meenakshi College Road

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NEWZEN CONSULTANT BANGALORE, #304, First floor, 6th Cross,Gidadakonenahalli, Viswaneedam Post, Bangalore-560091. CELL NO: +91 8792620231, 080 23240187 EMAIL:newzen576@gmail.com

NC/QC/YPD/2023-24/NM-2-CB1A **Date: 05-07-2023**

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (for 28days Compressive Strength).
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	07-06-23	05-07-23	28	22500	475	21.11	**20.96**
	002	"	"	"	"	460	20.44	
	003	"	"	"	"	480	21.33	

Sample Collected Site : Nitte Meenakshi College Road

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Asst. Executive Engineer
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NC/QC/YPD/2023-24/NM-2-CB2A **Date: 06-07-2023**

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (for 28days Compressive Strength).
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm
Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	08-06-23	06-07-23	28	22500	470	20.89	**21.04**
	002	"	"	"	"	485	21.56	
	003	"	"	"	"	465	20.67	

Sample Collected Site : Nitte Meenakshi College Road

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Yelahanka Zone
BBMP, Bangalore - 92

NEWZEN CONSULTANT BANGALORE, #304, First floor, 6th Cross,Gidadakonenahalli, Viswaneedam Post, Bangalore-560091. CELL NO: +91 8792620231, 080 23240187 EMAIL:newzen576@gmail.com

NC/QC/YPD/2023-24/NM-2-CB3A **Date: 07-07-2023**

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (for 28days Compressive Strength).
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm
Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	09-06-23	07-07-23	28	22500	460	20.44	**20.81**
	002	"	"	"	"	475	21.11	
	003	"	"	"	"	470	20.89	

Sample Collected Site : Nitte Meenakshi College Road

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Asst. Executive Engineer
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Yelahanka Zone
BBMP, Bangalore - 92

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NC/QC/YPD/2023-24/NM-2-CB4A

Date: 08-07-2023

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (for 28days Compressive Strength).

{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}

Ref.: Material testing/PMC/21-22,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	10-06-23	08-07-23	28	22500	455	20.22	**20.59**
	002	"	"	"	"	475	21.11	
	003	"	"	"	"	460	20.44	

Sample Collected Site : Nitte Meenakshi College Road

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

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NC/QC/YPD/2023-24/NM-2-CB5A Date: 10-07-2023

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (for 28days Compressive Strength).
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm
Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	12-06-23	10-07-23	28	22500	480	21.33	**21.26**
	002	"	"	"	"	475	21.11	
	003	"	"	"	"	480	21.33	

Sample Collected Site : Nitte Meenakshi College Road

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Page No. 1/1,

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-CB6A **Date: 11-07-2023**

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (for 28days Compressive Strength).

{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}

Ref.: Material testing/PMC/21-22,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	13-06-23	11-07-23	28	22500	485	21.56	**21.19**
	002	"	"	"	"	470	20.89	
	003	"	"	"	"	475	21.11	

Sample Collected Site : Nitte Meenakshi College Road

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Asst. Executive Engineer
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NC/QC/YPD/2023-24/NM-2-CB7A **Date: 12-07-2023**

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (for 28days Compressive Strength).
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	14-06-23	12-07-23	28	22500	475	21.11	**21.48**
	002	"	"	"	"	490	21.78	
	003	"	"	"	"	485	21.56	

Sample Collected Site : Nitte Meenakshi College Road

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Asst. Executive Engineer
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BBMP, Bangalore - 92

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NC/QC/YPD/2023-24/NM-2-S1 Date: 06-07-2023

TEST REPORT

Sub: Testing of Pre-cast Material-Precast Slab (100mm thick).
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

1. PHYSICAL TESTS ON PRECAST SLAB:

Sl No	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	90.00	0.418	2365.40	1.80	0.960	32.90	16.76	18.10	17.37	21.72
2	50.00	90.00	0.426	2410.67	1.80	0.960	33.60	17.11	18.48	17.74	22.18
3	50.00	90.00	0.412	2331.44	1.80	0.960	30.40	15.48	16.72	16.05	20.07

The result of the materials tested meets the standards and hence can be used for the work.
Sample Collected Site : Nitte Meenakshi College Road From Railway track LHS Ch:1548.20m to 1578.20m

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BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/GSB1 **Date: 26-06-2023**

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (Grade-V) mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. **Gradation Test:**
Location: Nitte Meenakshi College Road From Railway Gate Ch-0.00 m to 2.60m
TABLE 1.1

Sample **GSB** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
75.00	0.00	0.00	0.00	**100.00**	100
53.00	236.00	236.00	15.73	**84.27**	80-100
26.50	394.00	630.00	42.00	**58.00**	55-90
9.50	275.00	905.00	60.33	**39.67**	35-65
4.75	161.00	1066.00	71.07	**28.93**	25-50
2.36	264.00	1330.00	88.67	**11.33**	10-20
0.85	104.00	1434.00	95.60	**4.40**	2-10
0.425	66.00	1500.00	100.00	**0.00**	0-5

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Water absorption, %	**0.46 %**	Not more than 2.0 %
2.	Liquid Limit, %	**19.11**	Not more than 25.0 %
3.	Plasticity Index, %	**NP**	Not more than 6.0 %
4.	Moisture Content, %	**5.95**	----------
5.	Aggregate Impact Value, %	**27.73**	Not more than 40.00 %

The result of the materials tested meets the standards and hence can be used for the work

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Asst. Executive Engineer
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Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/GSB2 Date: 26-06-2023

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (Grade-V) mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. **Gradation Test:**
Location: Nitte Meenakshi College Road From Railway Gate Ch-2.60 m to 118.70m

TABLE 1.1

Sample GSB = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
75.00	0.00	0.00	0.00	**100.00**	100
53.00	221.00	221.00	14.73	**85.27**	80-100
26.50	406.00	627.00	41.80	**58.20**	55-90
9.50	306.00	933.00	62.20	**37.80**	35-65
4.75	154.00	1087.00	72.47	**27.53**	25-50
2.36	234.00	1321.00	88.07	**11.93**	10-20
0.85	103.00	1424.00	94.93	**5.07**	2-10
0.425	76.00	1500.00	100.00	**0.00**	0-5

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Water absorption, %	**0.46 %**	Not more than 2.0 %
2.	Liquid Limit, %	**19.18**	Not more than 25.0 %
3.	Plasticity Index, %	**NP**	Not more than 6.0 %
4.	Moisture Content, %	**5.31**	----------
5.	Aggregate Impact Value, %	**27.75**	Not more than 40.00 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT ★ Bangalore ★

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/GSB3 Date: 27-06-2023

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (Grade-V) mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. **Gradation Test:**
Location: Nitte Meenakshi College Road From Railway Gate Ch-118.70 m to 213.30m
TABLE 1.1

Sample **GSB** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
75.00	0.00	0.00	0.00	**100.00**	100
53.00	208.00	208.00	13.87	**86.13**	80-100
26.50	361.00	569.00	37.93	**62.07**	55-90
9.50	325.00	894.00	59.60	**40.40**	35-65
4.75	188.00	1082.00	72.13	**27.87**	25-50
2.36	225.00	1307.00	87.13	**12.87**	10-20
0.85	105.00	1412.00	94.13	**5.87**	2-10
0.425	88.00	1500.00	100.00	**0.00**	0-5

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Water absorption, %	**0.48 %**	Not more than 2.0 %
2.	Liquid Limit, %	**19.05**	Not more than 25.0 %
3.	Plasticity Index, %	**NP**	Not more than 6.0 %
4.	Moisture Content, %	**5.89**	----------
5.	Aggregate Impact Value, %	**27.16**	Not more than 40.00 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/GSB4 Date: 27-06-2023

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (Grade-V) mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. **Gradation Test:**
Location: Nitte Meenakshi College Road From Railway Gate Ch-213.30 m to 321.30m
TABLE 1.1

Sample **GSB** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
75.00	0.00	0.00	0.00	**100.00**	100
53.00	175.00	175.00	11.67	**88.33**	80-100
26.50	409.00	584.00	38.93	**61.07**	55-90
9.50	368.00	952.00	63.47	**36.53**	35-65
4.75	134.00	1086.00	72.40	**27.60**	25-50
2.36	236.00	1322.00	88.13	**11.87**	10-20
0.85	99.00	1421.00	94.73	**5.27**	2-10
0.425	79.00	1500.00	100.00	**0.00**	0-5

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Water absorption, %	**0.45 %**	Not more than 2.0 %
2.	Liquid Limit, %	**19.73**	Not more than 25.0 %
3.	Plasticity Index, %	**NP**	Not more than 6.0 %
4.	Moisture Content, %	**5.89**	----------
5.	Aggregate Impact Value, %	**27.45**	Not more than 40.00 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/GSB5 Date: 28-06-2023

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (Grade-V) mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. **Gradation Test:**
Location: Nitte Meenakshi College Road From Railway Gate Ch-321.30 m to 441.30m

TABLE 1.1

Sample **GSB** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
75.00	0.00	0.00	0.00	**100.00**	100
53.00	153.00	153.00	10.20	**89.80**	80-100
26.50	361.00	514.00	34.27	**65.73**	55-90
9.50	436.00	950.00	63.33	**36.67**	35-65
4.75	111.00	1061.00	70.73	**29.27**	25-50
2.36	191.00	1252.00	83.47	**16.53**	10-20
0.85	164.00	1416.00	94.40	**5.60**	2-10
0.425	84.00	1500.00	100.00	**0.00**	0-5

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Water absorption, %	**0.45 %**	Not more than 2.0 %
2.	Liquid Limit, %	**18.74**	Not more than 25.0 %
3.	Plasticity Index, %	**NP**	Not more than 6.0 %
4.	Moisture Content, %	**5.96**	----------
5.	Aggregate Impact Value, %	**27.63**	Not more than 40.00 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT ★ Bangalore ★

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/GSB6 **Date: 28-06-2023**

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (Grade-V) mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. **Gradation Test:**
Location Nitte Meenakshi College Road From Railway Gate Ch-441.30 m to 544.10m
TABLE 1.1

Sample **GSB** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
75.00	0.00	0.00	0.00	**100.00**	100
53.00	178.00	178.00	11.87	**88.13**	80-100
26.50	321.00	499.00	33.27	**66.73**	55-90
9.50	448.00	947.00	63.13	**36.87**	35-65
4.75	142.00	1089.00	72.60	**27.40**	25-50
2.36	206.00	1295.00	86.33	**13.67**	10-20
0.85	147.00	1442.00	96.13	**3.87**	2-10
0.425	58.00	1500.00	100.00	**0.00**	0-5

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)- 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Water absorption, %	**0.49 %**	Not more than 2.0 %
2.	Liquid Limit, %	**18.86**	Not more than 25.0 %
3.	Plasticity Index, %	**NP**	Not more than 6.0 %
4.	Moisture Content, %	**5.13**	----------
5.	Aggregate Impact Value, %	**27.36**	Not more than 40.00 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/GSB7 Date: 30-06-2023

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (Grade-V) mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. **Gradation Test:**
Location: Nitte Meenakshi College Road From Railway Gate Ch-544.10 m to 648.90m

TABLE 1.1

Sample **GSB** = Total Weight of the Sample (gm) : 1500.00

Sieve Size, mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits as per MoRTH Specifications, V Revision-2013
75.00	0.00	0.00	0.00	**100.00**	100
53.00	165.00	165.00	11.00	**89.00**	80-100
26.50	291.00	456.00	30.40	**69.60**	55-90
9.50	407.00	863.00	57.53	**42.47**	35-65
4.75	169.00	1032.00	68.80	**31.20**	25-50
2.36	235.00	1267.00	84.47	**15.53**	10-20
0.85	182.00	1449.00	96.60	**3.40**	2-10
0.425	51.00	1500.00	100.00	**0.00**	0-5

NEWZEN CONSULTANTS BANGALORE

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Water absorption, %	**0.45 %**	Not more than 2.0 %
2.	Liquid Limit, %	**20.15**	Not more than 25.0 %
3.	Plasticity Index, %	**NP**	Not more than 6.0 %
4.	Moisture Content, %	**6.19**	----------
5.	Aggregate Impact Value, %	**27.52**	Not more than 40.00 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/GSB8 Date: 30-06-2023

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (Grade-V) mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. **Gradation Test:**
Location: Nitte Meenakshi College Road From Railway Gate Ch-648.90 m to 768.90m

TABLE 1.1

Sample **GSB** = Total Weight of the Sample (gm) : 1500.00

Sieve Size, mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits as per MoRTH Specifications, V Revision-2013
75.00	0.00	0.00	0.00	**100.00**	100
53.00	169.00	169.00	11.27	**88.73**	80-100
26.50	298.00	467.00	31.13	**68.87**	55-90
9.50	363.00	830.00	55.33	**44.67**	35-65
4.75	180.00	1010.00	67.33	**32.67**	25-50
2.36	253.00	1263.00	84.20	**15.80**	10-20
0.85	196.00	1459.00	97.27	**2.73**	2-10
0.425	41.00	1500.00	100.00	**0.00**	0-5

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Water absorption, %	**0.45 %**	Not more than 2.0 %
2.	Liquid Limit, %	**19.88**	Not more than 25.0 %
3.	Plasticity Index, %	**NP**	Not more than 6.0 %
4.	Moisture Content, %	**6.39**	----------
5.	Aggregate Impact Value, %	**28.11**	Not more than 40.00 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/GSB9 Date: 01-07-2023

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (Grade-V) mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. **Gradation Test:**
Location: Nitte Meenakshi College Road From Railway Gate Ch-768.90 m to 862.90m
TABLE 1.1

Sample **GSB** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
75.00	0.00	0.00	0.00	**100.00**	100
53.00	185.00	185.00	12.33	**87.67**	80-100
26.50	281.00	466.00	31.07	**68.93**	55-90
9.50	296.00	762.00	50.80	**49.20**	35-65
4.75	173.00	935.00	62.33	**37.67**	25-50
2.36	279.00	1214.00	80.93	**19.07**	10-20
0.85	208.00	1422.00	94.80	**5.20**	2-10
0.425	78.00	1500.00	100.00	**0.00**	0-5

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Water absorption, %	**0.48 %**	Not more than 2.0 %
2.	Liquid Limit, %	**17.85**	Not more than 25.0 %
3.	Plasticity Index, %	**NP**	Not more than 6.0 %
4.	Moisture Content, %	**5.85**	----------
5.	Aggregate Impact Value, %	**27.14**	Not more than 40.00 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/GSB10 Date: 03-07-2023

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (Grade-V) mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. **Gradation Test:**
Location: Nitte Meenakshi College Road From Railway Gate Ch-862.90 m to 982.90m

TABLE 1.1

Sample **GSB** = Total Weight of the Sample (gm) : 1500.00

Sieve Size, mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits as per MoRTH Specifications, V Revision-2013
75.00	0.00	0.00	0.00	**100.00**	100
53.00	163.00	163.00	10.87	**89.13**	80-100
26.50	299.00	462.00	30.80	**69.20**	55-90
9.50	304.00	766.00	51.07	**48.93**	35-65
4.75	125.00	891.00	59.40	**40.60**	25-50
2.36	329.00	1220.00	81.33	**18.67**	10-20
0.85	242.00	1462.00	97.47	**2.53**	2-10
0.425	38.00	1500.00	100.00	**0.00**	0-5

NEWZEN CONSULTANTS Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Water absorption, %	**0.48 %**	Not more than 2.0 %
2.	Liquid Limit, %	**19.15**	Not more than 25.0 %
3.	Plasticity Index, %	**NP**	Not more than 6.0 %
4.	Moisture Content, %	**5.78**	----------
5.	Aggregate Impact Value, %	**27.30**	Not more than 40.00 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/GSB11 Date: 03-07-2023

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (Grade-V) mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. **Gradation Test:**
Location -Nitte Meenakshi College Road From Railway Gate Ch-982.90 m to 1093.40m

TABLE 1.1

Sample **GSB** = Total Weight of the Sample (gm) : 1500.00

Sieve Size, mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits as per MoRTH Specifications, V Revision-2013
75.00	0.00	0.00	0.00	**100.00**	100
53.00	188.00	188.00	12.53	**87.47**	80-100
26.50	271.00	459.00	30.60	**69.40**	55-90
9.50	364.00	823.00	54.87	**45.13**	35-65
4.75	146.00	969.00	64.60	**35.40**	25-50
2.36	360.00	1329.00	88.60	**11.40**	10-20
0.85	140.00	1469.00	97.93	**2.07**	2-10
0.425	31.00	1500.00	100.00	**0.00**	0-5

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o R.T.H Specification, V Revision -2013.
1.	Water absorption, %	**0.47 %**	Not more than 2.0 %
2.	Liquid Limit, %	**19.83**	Not more than 25.0 %
3.	Plasticity Index, %	**NP**	Not more than 6.0 %
4.	Moisture Content, %	**5.96**	----------
5.	Aggregate Impact Value, %	**27.75**	Not more than 40.00 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/GSB12 Date: 04-07-2023

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (Grade-V) mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. **Gradation Test:**
Location: Nitte Meenakshi College Road From Railway Gate Ch-1093.40 m to 1215.40m
TABLE 1.1

Sample **GSB** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
75.00	0.00	0.00	0.00	**100.00**	100
53.00	206.00	206.00	13.73	**86.27**	80-100
26.50	254.00	460.00	30.67	**69.33**	55-90
9.50	373.00	833.00	55.53	**44.47**	35-65
4.75	159.00	992.00	66.13	**33.87**	25-50
2.36	325.00	1317.00	87.80	**12.20**	10-20
0.85	141.00	1458.00	97.20	**2.80**	2-10
0.425	42.00	1500.00	100.00	**0.00**	0-5

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Water absorption, %	**0.46 %**	Not more than 2.0 %
2.	Liquid Limit, %	**21.36**	Not more than 25.0 %
3.	Plasticity Index, %	**NP**	Not more than 6.0 %
4.	Moisture Content, %	**6.19**	----------
5.	Aggregate Impact Value, %	**29.10**	Not more than 40.00 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/GSB13 Date: 05-07-2023

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (Grade-V) mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. **Gradation Test:**
Location: Nitte Meenakshi College Road From Railway Gate Ch-1215.40 m to 1241.40m

TABLE 1.1

Sample **GSB** = Total Weight of the Sample (gm) : 1500.00

Sieve Size, mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits as per MoRTH Specifications, V Revision-2013
75.00	0.00	0.00	0.00	**100.00**	100
53.00	185.00	185.00	12.33	**87.67**	80-100
26.50	262.00	447.00	29.80	**70.20**	55-90
9.50	399.00	846.00	56.40	**43.60**	35-65
4.75	143.00	989.00	65.93	**34.07**	25-50
2.36	309.00	1298.00	86.53	**13.47**	10-20
0.85	156.00	1454.00	96.93	**3.07**	2-10
0.425	46.00	1500.00	100.00	**0.00**	0-5

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Water absorption, %	**0.49 %**	Not more than 2.0 %
2.	Liquid Limit, %	**19.04**	Not more than 25.0 %
3.	Plasticity Index, %	**NP**	Not more than 6.0 %
4.	Moisture Content, %	**5.18**	----------
5.	Aggregate Impact Value, %	**27.55**	Not more than 40.00 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/GSB14 Date: 06-07-2023

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (Grade-V) mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. **Gradation Test:**
Location: Nitte Meenakshi College Road From Railway Gate Ch-1241.40 m to 1478.60m

TABLE 1.1

Sample GSB = Total Weight of the Sample (gm) : 1500.00

Sieve Size, mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits as per MoRTH Specifications, V Revision-2013
75.00	0.00	0.00	0.00	**100.00**	100
53.00	163.00	163.00	10.87	**89.13**	80-100
26.50	285.00	448.00	29.87	**70.13**	55-90
9.50	361.00	809.00	53.93	**46.07**	35-65
4.75	189.00	998.00	66.53	**33.47**	25-50
2.36	288.00	1286.00	85.73	**14.27**	10-20
0.85	173.00	1459.00	97.27	**2.73**	2-10
0.425	41.00	1500.00	100.00	**0.00**	0-5

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o R.T.H Specification, V Revision -2013.
1.	Water absorption, %	**0.46 %**	Not more than 2.0 %
2.	Liquid Limit, %	**19.12**	Not more than 25.0 %
3.	Plasticity Index, %	**NP**	Not more than 6.0 %
4.	Moisture Content, %	**5.75**	----------
5.	Aggregate Impact Value, %	**27.10**	Not more than 40.00 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/GSB15 Date: 07-07-2023

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (Grade-V) mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. **Gradation Test:**
Location: Nitte Meenakshi College Road From Railway Gate Ch-1478.60 m to 1598.60m

TABLE 1.1

Sample **GSB** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
75.00	0.00	0.00	0.00	**100.00**	100
53.00	142.00	142.00	9.47	**90.53**	80-100
26.50	348.00	490.00	32.67	**67.33**	55-90
9.50	380.00	870.00	58.00	**42.00**	35-65
4.75	195.00	1065.00	71.00	**29.00**	25-50
2.36	251.00	1316.00	87.73	**12.27**	10-20
0.85	133.00	1449.00	96.60	**3.40**	2-10
0.425	51.00	1500.00	100.00	**0.00**	0-5

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Water absorption, %	**0.48 %**	Not more than 2.0 %
2.	Liquid Limit, %	**18.53**	Not more than 25.0 %
3.	Plasticity Index, %	**NP**	Not more than 6.0 %
4.	Moisture Content, %	**6.08**	----------
5.	Aggregate Impact Value, %	**27.14**	Not more than 40.00 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANTS Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/GSB16 **Date: 10-07-2023**

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (Grade-V) mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. **Gradation Test:**
Location: Nitte Meenakshi College Road From Railway Gate Ch-1598.60 m to 1732.00m
TABLE 1.1

Sample **GSB** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
75.00	0.00	0.00	0.00	**100.00**	100
53.00	174.00	174.00	11.60	**88.40**	80-100
26.50	299.00	473.00	31.53	**68.47**	55-90
9.50	456.00	929.00	61.93	**38.07**	35-65
4.75	172.00	1101.00	73.40	**26.60**	25-50
2.36	226.00	1327.00	88.47	**11.53**	10-20
0.85	105.00	1432.00	95.47	**4.53**	2-10
0.425	68.00	1500.00	100.00	**0.00**	0-5

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Water absorption, %	**0.45 %**	Not more than 2.0 %
2.	Liquid Limit, %	**19.05**	Not more than 25.0 %
3.	Plasticity Index, %	**NP**	Not more than 6.0 %
4.	Moisture Content, %	**5.85**	----------
5.	Aggregate Impact Value, %	**27.13**	Not more than 40.00 %

The result of the materials tested meets the standards and hence can be used for the work

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NEWZEN CONSULTANT Bangalore

NC/QC/YPD/2023-24/NM-2-/GSB17 Date: 10-07-2023

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (Grade-V) mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. **Gradation Test:**
Location: Nitte Meenakshi College Road From Railway Gate Ch-1732.00 m to 1877.50m

TABLE 1.1

Sample GSB = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
75.00	0.00	0.00	0.00	**100.00**	100
53.00	152.00	152.00	10.13	**89.87**	80-100
26.50	318.00	470.00	31.33	**68.67**	55-90
9.50	415.00	885.00	59.00	**41.00**	35-65
4.75	186.00	1071.00	71.40	**28.60**	25-50
2.36	251.00	1322.00	88.13	**11.87**	10-20
0.85	109.00	1431.00	95.40	**4.60**	2-10
0.425	69.00	1500.00	100.00	**0.00**	0-5

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Water absorption, %	**0.49 %**	Not more than 2.0 %
2.	Liquid Limit, %	**18.14**	Not more than 25.0 %
3.	Plasticity Index, %	**NP**	Not more than 6.0 %
4.	Moisture Content, %	**5.15**	----------
5.	Aggregate Impact Value, %	**25.10**	Not more than 40.00 %

The result of the materials tested meets the standards and hence can be used for the work

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/W1 Date: 05-07-2023

TEST REPORT ON WET MIX MACADAM MIX

(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. Gradation Test:
Location : Nitte Meenakshi College Road From Railway Gate Ch-0.00 m to 2.60m

TABLE 1.1

Sample **WMM** = Total Weight of the Sample (gm) : 1500.00

Sieve Size, mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits as per MoRTH Specifications, V Revision-2013
53.00	0.00	0.00	0.00	**100.00**	100
45.00	61.00	61.00	4.07	**95.93**	95-100
26.50	---	---	---	---	-
22.40	496.00	557.00	37.13	**62.87**	60-80
11.20	209.00	766.00	51.07	**48.93**	40-60
4.75	275.00	1041.00	69.40	**30.60**	25-40
2.36	109.00	1150.00	76.67	**23.33**	15-30
0.600	139.00	1289.00	85.93	**14.07**	8-22
0.075	155.00	1444.00	96.27	**3.73**	0-5
Pan	56.00	1500.00	100.00	**0.00**	---

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**27.16 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**29.58 %**	Not more than 35.0 %
3.	Water absorption, %	**0.48 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT ★ Bangalore ★

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/W2 **Date: 06-07-2023**

TEST REPORT ON WET MIX MACADAM MIX

(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. Gradation Test:
Location : Nitte Meenakshi College Road From Railway Gate Ch-88.70 m to 178.70m

TABLE 1.1

Sample **WMM** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
53.00	0.00	0.00	0.00	**100.00**	100
45.00	49.00	49.00	3.27	**96.73**	95-100
26.50	---	---	---	---	-
22.40	478.00	527.00	35.13	**64.87**	60-80
11.20	231.00	758.00	50.53	**49.47**	40-60
4.75	296.00	1054.00	70.27	**29.73**	25-40
2.36	141.00	1195.00	79.67	**20.33**	15-30
0.600	157.00	1352.00	90.13	**9.87**	8-22
0.075	123.00	1475.00	98.33	**1.67**	0-5
Pan	25.00	1500.00	100.00	**0.00**	---

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**29.10 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**27.60 %**	Not more than 35.0 %
3.	Water absorption, %	**0.47 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT * Bangalore *

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/W3 **Date: 07-07-2023**

TEST REPORT ON WET MIX MACADAM MIX

(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. Gradation Test:
Location : Nitte Meenakshi College Road From Railway Gate Ch-178.70 m to 261.30m

TABLE 1.1

Sample **WMM** = Total Weight of the Sample (gm) : 1500.00

Sieve Size, mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits as per MoRTH Specifications, V Revision-2013
53.00	0.00	0.00	0.00	**100.00**	100
45.00	45.00	45.00	3.00	**97.00**	95-100
26.50	---	---	---	---	-
22.40	489.00	534.00	35.60	**64.40**	60-80
11.20	265.00	799.00	53.27	**46.73**	40-60
4.75	317.00	1116.00	74.40	**25.60**	25-40
2.36	120.00	1236.00	82.40	**17.60**	15-30
0.600	114.00	1350.00	90.00	**10.00**	8-22
0.075	104.00	1454.00	96.93	**3.07**	0-5
Pan	46.00	1500.00	100.00	**0.00**	---

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**26.10 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**28.90 %**	Not more than 35.0 %
3.	Water absorption, %	**0.45 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT * Bangalore *

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/W4 **Date: 10-07-2023**

TEST REPORT ON WET MIX MACADAM MIX

(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. Gradation Test:
Location : Nitte Meenakshi College Road From Railway Gate Ch-261.30 m to 351.30m
TABLE 1.1

Sample **WMM** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
53.00	0.00	0.00	0.00	**100.00**	100
45.00	18.00	18.00	1.20	**98.80**	95-100
26.50	---	---	---	---	-
22.40	509.00	527.00	35.13	**64.87**	60-80
11.20	230.00	757.00	50.47	**49.53**	40-60
4.75	296.00	1053.00	70.20	**29.80**	25-40
2.36	144.00	1197.00	79.80	**20.20**	15-30
0.600	125.00	1322.00	88.13	**11.87**	8-22
0.075	119.00	1441.00	96.07	**3.93**	0-5
Pan	59.00	1500.00	100.00	**0.00**	---

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**27.40 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**28.90 %**	Not more than 35.0 %
3.	Water absorption, %	**0.44 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT * Bangalore *

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/W5 Date: 11-07-2023

TEST REPORT ON WET MIX MACADAM MIX
(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. Gradation Test:
Location : Nitte Meenakshi College Road From Railway Gate Ch-351.30 m to 471.30m

TABLE 1.1

Sample **WMM** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
53.00	0.00	0.00	0.00	**100.00**	100
45.00	24.00	24.00	1.60	**98.40**	95-100
26.50	---	---	---	---	-
22.40	419.00	443.00	29.53	**70.47**	60-80
11.20	264.00	707.00	47.13	**52.87**	40-60
4.75	311.00	1018.00	67.87	**32.13**	25-40
2.36	187.00	1205.00	80.33	**19.67**	15-30
0.600	168.00	1373.00	91.53	**8.47**	8-22
0.075	95.00	1468.00	97.87	**2.13**	0-5
Pan	32.00	1500.00	100.00	**0.00**	---

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**27.90 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**28.60 %**	Not more than 35.0 %
3.	Water absorption, %	**0.44 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/W6 Date: 12-07-2023

TEST REPORT ON WET MIX MACADAM MIX
(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. Gradation Test:
Location : Nitte Meenakshi College Road From Railway Gate Ch-471.30 m to 559.10m

TABLE 1.1

Sample **WMM** = Total Weight of the Sample (gm) : 1500.00

Sieve Size, mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits as per MoRTH Specifications, V Revision-2013
53.00	0.00	0.00	0.00	**100.00**	100
45.00	31.00	31.00	2.07	**97.93**	95-100
26.50	---	---	---	---	-
22.40	459.00	490.00	32.67	**67.33**	60-80
11.20	305.00	795.00	53.00	**47.00**	40-60
4.75	214.00	1009.00	67.27	**32.73**	25-40
2.36	209.00	1218.00	81.20	**18.80**	15-30
0.600	113.00	1331.00	88.73	**11.27**	8-22
0.075	128.00	1459.00	97.27	**2.73**	0-5
Pan	41.00	1500.00	100.00	**0.00**	---

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/W7 Date: 13-07-2023

TEST REPORT ON WET MIX MACADAM MIX
(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. Gradation Test:
Location : Nitte Meenakshi College Road From Railway Gate Ch-559.10 m to 634.10m

TABLE 1.1

Sample **WMM** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
53.00	0.00	0.00	0.00	**100.00**	100
45.00	38.00	38.00	2.53	**97.47**	95-100
26.50	---	---	---	---	-
22.40	425.00	463.00	30.87	**69.13**	60-80
11.20	320.00	783.00	52.20	**47.80**	40-60
4.75	202.00	985.00	65.67	**34.33**	25-40
2.36	269.00	1254.00	83.60	**16.40**	15-30
0.600	107.00	1361.00	90.73	**9.27**	8-22
0.075	101.00	1462.00	97.47	**2.53**	0-5
Pan	38.00	1500.00	100.00	**0.00**	---

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**27.30 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**29.70 %**	Not more than 35.0 %
3.	Water absorption, %	**0.46 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/W8 Date: 14-07-2023

TEST REPORT ON WET MIX MACADAM MIX
(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. Gradation Test:
Location : Nitte Meenakshi College Road From Railway Gate Ch-634.10 m to 738.90m

TABLE 1.1

Sample **WMM** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
53.00	0.00	0.00	0.00	**100.00**	100
45.00	59.00	59.00	3.93	**96.07**	95-100
26.50	---	---	---	---	-
22.40	402.00	461.00	30.73	**69.27**	60-80
11.20	365.00	826.00	55.07	**44.93**	40-60
4.75	258.00	1084.00	72.27	**27.73**	25-40
2.36	145.00	1229.00	81.93	**18.07**	15-30
0.600	130.00	1359.00	90.60	**9.40**	8-22
0.075	128.00	1487.00	99.13	**0.87**	0-5
Pan	13.00	1500.00	100.00	**0.00**	---

NEWZEN CONSULTANT Bangalore

2. Physical properties of aggregates:

Assistant Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**27.10 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**28.60 %**	Not more than 35.0 %
3.	Water absorption, %	**0.42 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/W9 Date: 15-07-2023

TEST REPORT ON WET MIX MACADAM MIX
(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. Gradation Test:
Location : Nitte Meenakshi College Road From Railway Gate Ch-738.90 m to 830.40m
TABLE 1.1

Sample **WMM** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
53.00	0.00	0.00	0.00	**100.00**	100
45.00	52.00	52.00	3.47	**96.53**	95-100
26.50	---	---	---	---	-
22.40	478.00	530.00	35.33	**64.67**	60-80
11.20	310.00	840.00	56.00	**44.00**	40-60
4.75	217.00	1057.00	70.47	**29.53**	25-40
2.36	156.00	1213.00	80.87	**19.13**	15-30
0.600	102.00	1315.00	87.67	**12.33**	8-22
0.075	153.00	1468.00	97.87	**2.13**	0-5
Pan	32.00	1500.00	100.00	**0.00**	---

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**27.50 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**29.90 %**	Not more than 35.0 %
3.	Water absorption, %	**0.48 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/W10

Date: 17-07-2023

TEST REPORT ON WET MIX MACADAM MIX
(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. Gradation Test:
Location : Nitte Meenakshi College Road From Railway Gate Ch-830.40 m to 952.90m
TABLE 1.1

Sample **WMM** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
53.00	0.00	0.00	0.00	**100.00**	100
45.00	42.00	42.00	2.80	**97.20**	95-100
26.50	---	---	---	---	-
22.40	415.00	457.00	30.47	**69.53**	60-80
11.20	361.00	818.00	54.53	**45.47**	40-60
4.75	285.00	1103.00	73.53	**26.47**	25-40
2.36	130.00	1233.00	82.20	**17.80**	15-30
0.600	117.00	1350.00	90.00	**10.00**	8-22
0.075	132.00	1482.00	98.80	**1.20**	0-5
Pan	18.00	1500.00	100.00	**0.00**	---

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**27.10 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**29.90 %**	Not more than 35.0 %
3.	Water absorption, %	**0.45 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/W11 **Date: 18-07-2023**

TEST REPORT ON WET MIX MACADAM MIX
(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. Gradation Test:
Location : Nitte Meenakshi College Road From Railway Gate Ch-952.90 m to 1063.40m

TABLE 1.1

Sample **WMM** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
53.00	0.00	0.00	0.00	**100.00**	100
45.00	29.00	29.00	1.93	**98.07**	95-100
26.50	---	---	---	---	-
22.40	463.00	492.00	32.80	**67.20**	60-80
11.20	326.00	818.00	54.53	**45.47**	40-60
4.75	250.00	1068.00	71.20	**28.80**	25-40
2.36	135.00	1203.00	80.20	**19.80**	15-30
0.600	102.00	1305.00	87.00	**13.00**	8-22
0.075	121.00	1426.00	95.07	**4.93**	0-5
Pan	74.00	1500.00	100.00	**0.00**	---

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**27.20 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**29.50 %**	Not more than 35.0 %
3.	Water absorption, %	**0.48 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/W12 **Date: 19-07-2023**

TEST REPORT ON WET MIX MACADAM MIX
(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. Gradation Test:
Location : Nitte Meenakshi College Road From Railway Gate Ch-1063.40 m to 1155.40m
TABLE 1.1

Sample **WMM** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
53.00	0.00	0.00	0.00	**100.00**	100
45.00	37.00	37.00	2.47	**97.53**	95-100
26.50	---	---	---	---	-
22.40	413.00	450.00	30.00	**70.00**	60-80
11.20	365.00	815.00	54.33	**45.67**	40-60
4.75	298.00	1113.00	74.20	**25.80**	25-40
2.36	124.00	1237.00	82.47	**17.53**	15-30
0.600	87.00	1324.00	88.27	**11.73**	8-22
0.075	136.00	1460.00	97.33	**2.67**	0-5
Pan	40.00	1500.00	100.00	**0.00**	---

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**26.10 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**29.50 %**	Not more than 35.0 %
3.	Water absorption, %	**0.44 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NEWZEN CONSULTANTS Bangalore

NC/QC/YPD/2023-24/NM-2-/W13

Date: 20-07-2023

TEST REPORT ON WET MIX MACADAM MIX
(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. Gradation Test:
Location : Nitte Meenakshi College Road From Railway Gate Ch-1155.40 m to 1256.40m

TABLE 1.1

Sample **WMM** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
53.00	0.00	0.00	0.00	**100.00**	100
45.00	31.00	31.00	2.07	**97.93**	95-100
26.50	---	---	---	---	-
22.40	468.00	499.00	33.27	**66.73**	60-80
11.20	339.00	838.00	55.87	**44.13**	40-60
4.75	175.00	1013.00	67.53	**32.47**	25-40
2.36	102.00	1115.00	74.33	**25.67**	15-30
0.600	169.00	1284.00	85.60	**14.40**	8-22
0.075	191.00	1475.00	98.33	**1.67**	0-5
Pan	25.00	1500.00	100.00	**0.00**	---

NEWZEN CONSULTANT ★ Bangalore ★

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**26.10 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**27.80 %**	Not more than 35.0 %
3.	Water absorption, %	**0.49 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/W14 Date: 20-07-2023

TEST REPORT ON WET MIX MACADAM MIX
(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22.
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd. Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. Gradation Test:
Location : Nitte Meenakshi College Road From Railway Gate Ch-1256.40 m to 1478.60m

TABLE 1.1

Sample **WMM** = Total Weight of the Sample (gm) : 1500.00

Sieve Size, mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits as per MoRTH Specifications, V Revision-2013
53.00	0.00	0.00	0.00	100.00	100
45.00	18.00	18.00	1.20	98.80	95-100
26.50	—	—	—	—	-
22.40	531.00	549.00	36.60	63.40	60-80
11.20	302.00	851.00	56.73	43.27	40-60
4.75	219.00	1070.00	71.33	28.67	25-40
2.36	114.00	1184.00	78.93	21.07	15-30
0.600	143.00	1327.00	88.47	11.53	8-22
0.075	157.00	1484.00	98.93	1.07	0-5
Pan	16.00	1500.00	100.00	0.00	—

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**27.50 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**29.10 %**	Not more than 35.0 %
3.	Water absorption, %	**0.44 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/W15

Date: 21-07-2023

TEST REPORT ON WET MIX MACADAM MIX
(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. Gradation Test:
Location : Nitte Meenakshi College Road From Railway Gate Ch-1478.60 m to 1568.60m

TABLE 1.1

Sample **WMM** = Total Weight of the Sample (gm) : 1500.00

Sieve Size, mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits as per MoRTH Specifications, V Revision-2013
53.00	0.00	0.00	0.00	**100.00**	100
45.00	43.00	43.00	2.87	**97.13**	95-100
26.50	---	---	---	---	-
22.40	506.00	549.00	36.60	**63.40**	60-80
11.20	259.00	808.00	53.87	**46.13**	40-60
4.75	184.00	992.00	66.13	**33.87**	25-40
2.36	152.00	1144.00	76.27	**23.73**	15-30
0.600	199.00	1343.00	89.53	**10.47**	8-22
0.075	135.00	1478.00	98.53	**1.47**	0-5
Pan	22.00	1500.00	100.00	**0.00**	---

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**27.20 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**26.80 %**	Not more than 35.0 %
3.	Water absorption, %	**0.49 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/W16 Date: 24-07-2023

TEST REPORT ON WET MIX MACADAM MIX
(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. Gradation Test:
Location : Nitte Meenakshi College Road From Railway Gate Ch-1568.60 m to 1672.00m

TABLE 1.1

Sample **WMM** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
53.00	0.00	0.00	0.00	**100.00**	100
45.00	65.00	65.00	4.33	**95.67**	95-100
26.50	---	---	---	---	-
22.40	426.00	491.00	32.73	**67.27**	60-80
11.20	299.00	790.00	52.67	**47.33**	40-60
4.75	125.00	915.00	61.00	**39.00**	25-40
2.36	187.00	1102.00	73.47	**26.53**	15-30
0.600	231.00	1333.00	88.87	**11.13**	8-22
0.075	142.00	1475.00	98.33	**1.67**	0-5
Pan	25.00	1500.00	100.00	**0.00**	---

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**29.10 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**29.00 %**	Not more than 35.0 %
3.	Water absorption, %	**0.45 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/W17 Date: 25-07-2023

TEST REPORT ON WET MIX MACADAM MIX

(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. Gradation Test:
Location : Nitte Meenakshi College Road From Railway Gate Ch-1672.00 m to 1772.50m

TABLE 1.1

Sample **WMM** = Total Weight of the Sample (gm) : 1500.00

Sieve Size, mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits as per MoRTH Specifications, V Revision-2013
53.00	0.00	0.00	0.00	**100.00**	100
45.00	58.00	58.00	3.87	**96.13**	95-100
26.50	---	---	---	---	-
22.40	451.00	509.00	33.93	**66.07**	60-80
11.20	315.00	824.00	54.93	**45.07**	40-60
4.75	193.00	1017.00	67.80	**32.20**	25-40
2.36	241.00	1258.00	83.87	**16.13**	15-30
0.600	99.00	1357.00	90.47	**9.53**	8-22
0.075	109.00	1466.00	97.73	**2.27**	0-5
Pan	34.00	1500.00	100.00	**0.00**	---

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**27.20 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**26.50 %**	Not more than 35.0 %
3.	Water absorption, %	**0.42 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANTS Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/W18 **Date: 26-07-2023**

TEST REPORT ON WET MIX MACADAM MIX

(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. Gradation Test:
Location : Nitte Meenakshi College Road From Railway Gate Ch-1772.50 m to 1877.50m

TABLE 1.1

Sample **WMM** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
53.00	0.00	0.00	0.00	**100.00**	100
45.00	51.00	51.00	3.40	**96.60**	95-100
26.50	---	---	---	---	-
22.40	469.00	520.00	34.67	**65.33**	60-80
11.20	273.00	793.00	52.87	**47.13**	40-60
4.75	204.00	997.00	66.47	**33.53**	25-40
2.36	256.00	1253.00	83.53	**16.47**	15-30
0.600	71.00	1324.00	88.27	**11.73**	8-22
0.075	145.00	1469.00	97.93	**2.07**	0-5
Pan	31.00	1500.00	100.00	**0.00**	---

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/W18 Date: 26-07-2023

TEST REPORT ON WET MIX MACADAM MIX

(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. Gradation Test:
Location : Nitte Meenakshi College Road From Railway Gate Ch-1772.50 m to 1877.50m

TABLE 1.1

Sample **WMM** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
53.00	0.00	0.00	0.00	**100.00**	100
45.00	51.00	51.00	3.40	**96.60**	95-100
26.50	---	---	---	---	-
22.40	469.00	520.00	34.67	**65.33**	60-80
11.20	273.00	793.00	52.87	**47.13**	40-60
4.75	204.00	997.00	66.47	**33.53**	25-40
2.36	256.00	1253.00	83.53	**16.47**	15-30
0.600	71.00	1324.00	88.27	**11.73**	8-22
0.075	145.00	1469.00	97.93	**2.07**	0-5
Pan	31.00	1500.00	100.00	**0.00**	---

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**27.50 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**28.80 %**	Not more than 35.0 %
3.	Water absorption, %	**0.47 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/W19 Date: 27-07-2023

TEST REPORT ON WET MIX MACADAM MIX
(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. Gradation Test:
Location : Nitte Meenakshi College Road From Railway Gate Ch-1877.50 m to 1967.50m
TABLE 1.1

Sample **WMM** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
53.00	0.00	0.00	0.00	**100.00**	100
45.00	43.00	43.00	2.87	**97.13**	95-100
26.50	---	---	---	---	-
22.40	496.00	539.00	35.93	**64.07**	60-80
11.20	315.00	854.00	56.93	**43.07**	40-60
4.75	229.00	1083.00	72.20	**27.80**	25-40
2.36	147.00	1230.00	82.00	**18.00**	15-30
0.600	78.00	1308.00	87.20	**12.80**	8-22
0.075	153.00	1461.00	97.40	**2.60**	0-5
Pan	39.00	1500.00	100.00	**0.00**	---

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**26.30 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**28.70 %**	Not more than 35.0 %
3.	Water absorption, %	**0.46 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/W20 Date: 28-07-2023

TEST REPORT ON WET MIX MACADAM MIX

(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. Gradation Test:
Location : Nitte Meenakshi College Road From Railway Gate Ch-1967.50 m to 2093.60m

TABLE 1.1

Sample **WMM** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
53.00	0.00	0.00	0.00	**100.00**	100
45.00	49.00	49.00	3.27	**96.73**	95-100
26.50	---	---	---	---	-
22.40	470.00	519.00	34.60	**65.40**	60-80
11.20	328.00	847.00	56.47	**43.53**	40-60
4.75	217.00	1064.00	70.93	**29.07**	25-40
2.36	156.00	1220.00	81.33	**18.67**	15-30
0.600	99.00	1319.00	87.93	**12.07**	8-22
0.075	122.00	1441.00	96.07	**3.93**	0-5
Pan	59.00	1500.00	100.00	**0.00**	---

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Project Division
Yelahanka Zone
BBMP, Bangalore-92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**27.10 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**29.60 %**	Not more than 35.0 %
3.	Water absorption, %	**0.44 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/W21 Date: 31-07-2023

TEST REPORT ON WET MIX MACADAM MIX

(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

1. Gradation Test:
Location : Nitte Meenakshi College Road From Railway Gate Ch-2093.60m

TABLE 1.1

Sample **WMM** = Total Weight of the Sample (gm) : 1500.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Specified Limits as per MoRTH Specifications, V Revision-2013**
53.00	0.00	0.00	0.00	**100.00**	100
45.00	66.00	66.00	4.40	**95.60**	95-100
26.50	---	---	---	---	-
22.40	415.00	481.00	32.07	**67.93**	60-80
11.20	359.00	840.00	56.00	**44.00**	40-60
4.75	236.00	1076.00	71.73	**28.27**	25-40
2.36	164.00	1240.00	82.67	**17.33**	15-30
0.600	117.00	1357.00	90.47	**9.53**	8-22
0.075	104.00	1461.00	97.40	**2.60**	0-5
Pan	39.00	1500.00	100.00	**0.00**	---

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. Properties of Aggregates:

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**27.40 %**	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	**29.80 %**	Not more than 35.0 %
3.	Water absorption, %	**0.49 %**	Not more than 2.0 %
4.	Plasticity Index, %	**NP**	Not more than 6.0 %

The result of the materials tested meets the standards and hence can be used for the work

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/BD1 Date: 24-07-2023

1. TEST REPORT ON BITUMEN SAMPLE:

Sub: Testing of Bitumen sample VG-30 Grade.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.
Technical Reference: Ministry of Road Transport and Highways, V Revision, 2013 and IS 73: 1992.

TABLE 1.1 ;

SL No	Details	Test Results	Requirements as per I.S 73 –1992 Specifications
1.	Penetration at 25^0 C	**50.30^0 C**	Min. 45
2.	Ductility Value at 25^0 C	**98.90 cm**	40
3.	Flash point	**242^0 C**	Minimum 220^0 C
4.	Softening point	**52.70^0 C**	Min. 47

The result of the materials tested meets the standards and hence can be used for the work Nitte Meenakshi College Road From Railway Gate Ch-0.00 m to 2.60m

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Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/CD1 **Date: 24-07-2023**

1. TEST REPORT ON COARSE AGGREGATE:

Sub: Testing of Coarse Aggregate used in Dense Graded Bituminous Macadam.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TABLE 1.1 ;

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**26.30 %**	Not more than 27.00 % for DBM
2.	Combined Flakiness and Elongation index, %	**28.49 %**	Not more than 35.0 %
3.	Water absorption, %	**0.44 %**	Not more than 2.0 %
4.	Specific gravity	**2.60**	-------
5.	Soundness	**6.39 %**	Max. 12 % in Sodium Sulphate

The result of the materials tested meets the standards and hence can be used for the work Nitte Meenakshi College Road From Railway Gate Ch-0.00 m to 2.60m

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Asst. Executive Engineer
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Yelahanka Zone
BBMP, Bangalore-92

NC/QC/YPD/2023-24/NM-2-/DBM1 **Date: 24-07-2023**

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A.Type of Construction : **Dense Graded Bituminous Macadam.**
Location -Nitte Meenakshi College Road From Railway Gate Ch-0.00 m to 2.60m

1. BITUMEN EXTRACTION TEST – DBM
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	500.00
2	Weight of the Sample After Extraction, gm	S2	478.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	4.60

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore

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2. **Gradation Test** – Extraction Sample

TABLE 2.1

Sample C1 **DBM** = Total Weight of the Sample (gm) : 478.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)**
37.5	0.00	0.00	0.00	**100.00**	100
26.5	35.00	35.00	7.32	**92.68**	90-100
19.0	84.00	119.00	24.90	**75.10**	71-95
13.20	81.00	200.00	41.84	**58.16**	56-80
4.75	82.00	282.00	59.00	**41.00**	38-54
2.36	55.00	337.00	70.50	**29.50**	28-42
0.300	87.00	424.00	88.70	**11.30**	7-21
0.075	28.00	452.00	94.56	**5.44**	2-8
Pan	26.00	478.00	100.00	**0.00**	---

3. **Properties of DBM (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1016**	900
2	Marshall Flow at 60°C, mm.	**3.14**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/DBM2 **Date: 24-07-2023**

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A.Type of Construction : **Dense Graded Bituminous Macadam.**
Location: Nitte Meenakshi College Road From Railway Gate Ch-2.60 m to 88.70m

1. BITUMEN EXTRACTION TEST – DBM
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	550.00
2	Weight of the Sample After Extraction, gm	S2	526.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	4.55

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. **Gradation Test** – Extraction Sample

TABLE 2.1

Sample C1 **DBM** = Total Weight of the Sample (gm) : 526.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)**
37.5	0.00	0.00	0.00	**100.00**	100
26.5	19.00	19.00	3.61	**96.39**	90-100
19.0	105.00	124.00	23.57	**76.43**	71-95
13.20	93.00	217.00	41.25	**58.75**	56-80
4.75	109.00	326.00	61.98	**38.02**	38-54
2.36	42.00	368.00	69.96	**30.04**	28-42
0.300	95.00	463.00	88.02	**11.98**	7-21
0.075	38.00	501.00	95.25	**4.75**	2-8
Pan	25.00	526.00	100.00	**0.00**	---

3. **Properties of DBM (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1139**	900
2	Marshall Flow at 60°C, mm.	**3.01**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore-03

NC/QC/YPD/2023-24/NM-2-/DBM3 Date: 25-07-2023

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A.Type of Construction : **Dense Graded Bituminous Macadam.**
Location: Nitte Meenakshi College Road From Railway Gate Ch-88.70 m to 208.70m

1. BITUMEN EXTRACTION TEST – DBM
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	550.00
2	Weight of the Sample After Extraction, gm	S2	525.00
3	Initial weight of Filter paper, gm	F1	5.00
4	Final weight of Filter paper, gm	F2	6.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	4.73

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. **Gradation Test** – Extraction Sample

TABLE 2.1

Sample C1 **DBM** = Total Weight of the Sample (gm) : 525.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)**
37.5	0.00	0.00	0.00	**100.00**	100
26.5	29.00	29.00	5.52	**94.48**	90-100
19.0	75.00	104.00	19.81	**80.19**	71-95
13.20	71.00	175.00	33.33	**66.67**	56-80
4.75	97.00	272.00	51.81	**48.19**	38-54
2.36	41.00	313.00	59.62	**40.38**	28-42
0.300	117.00	430.00	81.90	**18.10**	7-21
0.075	77.00	507.00	96.57	**3.43**	2-8
Pan	18.00	525.00	100.00	**0.00**	---

3. **Properties of DBM (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**961**	900
2	Marshall Flow at 60°C, mm.	**2.35**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/DBM4 Date: 25-07-2023

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A.Type of Construction : **Dense Graded Bituminous Macadam.**
Location: Nitte Meenakshi College Road From Railway Gate Ch-208.70 m to 321.30m

1. BITUMEN EXTRACTION TEST – DBM
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	550.00
2	Weight of the Sample After Extraction, gm	S2	526.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	4.55

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. **Gradation Test** – Extraction Sample

TABLE 2.1

Sample C1 **DBM** = Total Weight of the Sample (gm) : 526.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)**
37.5	0.00	0.00	0.00	**100.00**	100
26.5	18.00	18.00	3.42	**96.58**	90-100
19.0	75.00	93.00	17.68	**82.32**	71-95
13.20	69.00	162.00	30.80	**69.20**	56-80
4.75	92.00	254.00	48.29	**51.71**	38-54
2.36	117.00	371.00	70.53	**29.47**	28-42
0.300	71.00	442.00	84.03	**15.97**	7-21
0.075	55.00	497.00	94.49	**5.51**	2-8
Pan	29.00	526.00	100.00	**0.00**	---

3. **Properties of DBM (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**998**	900
2	Marshall Flow at 60°C, mm.	**3.25**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/DBM5 **Date: 26-07-2023**

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A.Type of Construction : **Dense Graded Bituminous Macadam.**
Location: Nitte Meenakshi College Road From Railway Gate Ch-321.30 m to 471.30m

1. BITUMEN EXTRACTION TEST – DBM
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	500.00
2	Weight of the Sample After Extraction, gm	S2	478.00
3	Initial weight of Filter paper, gm	F1	5.00
4	Final weight of Filter paper, gm	F2	6.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	4.60

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore-92

2. **Gradation Test** – Extraction Sample

TABLE 2.1

Sample C1 **DBM** = Total Weight of the Sample (gm) : 478.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)**
37.5	0.00	0.00	0.00	**100.00**	100
26.5	19.00	19.00	3.97	**96.03**	90-100
19.0	93.00	112.00	23.43	**76.57**	71-95
13.20	88.00	200.00	41.84	**58.16**	56-80
4.75	79.00	279.00	58.37	**41.63**	38-54
2.36	53.00	332.00	69.46	**30.54**	28-42
0.300	84.00	416.00	87.03	**12.97**	7-21
0.075	49.00	465.00	97.28	**2.72**	2-8
Pan	13.00	478.00	100.00	**0.00**	---

3. **Properties of DBM (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1014**	900
2	Marshall Flow at 60°C, mm.	**3.85**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/DBM6

Date: 26-07-2023

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A.Type of Construction : **Dense Graded Bituminous Macadam.**
Location: Nitte Meenakshi College Road From Railway Gate Ch-471.30 m to 589.10m

1. BITUMEN EXTRACTION TEST – DBM
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	525.00
2	Weight of the Sample After Extraction, gm	S2	502.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	4.57

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore-63

2. **Gradation Test** – Extraction Sample

TABLE 2.1

Sample C1 **DBM** = Total Weight of the Sample (gm) : 502.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)**
37.5	0.00	0.00	0.00	**100.00**	100
26.5	26.00	26.00	5.18	**94.82**	90-100
19.0	65.00	91.00	18.13	**81.87**	71-95
13.20	84.00	175.00	34.86	**65.14**	56-80
4.75	99.00	274.00	54.58	**45.42**	38-54
2.36	75.00	349.00	69.52	**30.48**	28-42
0.300	85.00	434.00	86.45	**13.55**	7-21
0.075	48.00	482.00	96.02	**3.98**	2-8
Pan	20.00	502.00	100.00	**0.00**	---

3. **Properties of DBM (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1059**	900
2	Marshall Flow at 60°C, mm.	**3.41**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/DBM7 Date: 27-07-2023

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A.Type of Construction : **Dense Graded Bituminous Macadam.**
Location: Nitte Meenakshi College Road From Railway Gate Ch-589.10 m to 708.90m

1. BITUMEN EXTRACTION TEST – DBM
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	540.00
2	Weight of the Sample After Extraction, gm	S2	516.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	4.63

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. **Gradation Test** – Extraction Sample

TABLE 2.1

Sample C1 **DBM** = Total Weight of the Sample (gm) : 516.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)**
37.5	0.00	0.00	0.00	**100.00**	100
26.5	31.00	31.00	6.01	**93.99**	90-100
19.0	105.00	136.00	26.36	**73.64**	71-95
13.20	78.00	214.00	41.47	**58.53**	56-80
4.75	75.00	289.00	56.01	**43.99**	38-54
2.36	51.00	340.00	65.89	**34.11**	28-42
0.300	88.00	428.00	82.95	**17.05**	7-21
0.075	59.00	487.00	94.38	**5.62**	2-8
Pan	29.00	516.00	100.00	**0.00**	---

3. **Properties of DBM (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1097**	900
2	Marshall Flow at 60°C, mm.	**3.65**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/DBM8 **Date: 27-07-2023**

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A.Type of Construction : **Dense Graded Bituminous Macadam.**
Location: Nitte Meenakshi College Road From Railway Gate Ch-708.90 m to 822.60m

1. BITUMEN EXTRACTION TEST – DBM
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	520.00
2	Weight of the Sample After Extraction, gm	S2	497.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	4.62

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. **Gradation Test** – Extraction Sample

TABLE 2.1

Sample C1 **DBM** = Total Weight of the Sample (gm) : 497.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)**
37.5	0.00	0.00	0.00	**100.00**	100
26.5	19.00	19.00	3.82	**96.18**	90-100
19.0	82.00	101.00	20.32	**79.68**	71-95
13.20	88.00	189.00	38.03	**61.97**	56-80
4.75	107.00	296.00	59.56	**40.44**	38-54
2.36	45.00	341.00	68.61	**31.39**	28-42
0.300	104.00	445.00	89.54	**10.46**	7-21
0.075	32.00	477.00	95.98	**4.02**	2-8
Pan	20.00	497.00	100.00	**0.00**	---

3. **Properties of DBM (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1032**	900
2	Marshall Flow at 60°C, mm.	**3.17**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/DBM9 **Date: 28-07-2023**

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A.Type of Construction : **Dense Graded Bituminous Macadam.**
Location: Nitte Meenakshi College Road From Railway Gate Ch-822.60 m to 952.90m

1. BITUMEN EXTRACTION TEST – DBM
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	530.00
2	Weight of the Sample After Extraction, gm	S2	507.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	4.53

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. **Gradation Test** – Extraction Sample

TABLE 2.1

Sample C1 **DBM** = Total Weight of the Sample (gm) : 507.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)**
37.5	0.00	0.00	0.00	**100.00**	100
26.5	34.00	34.00	6.71	**93.29**	90-100
19.0	71.00	105.00	20.71	**79.29**	71-95
13.20	56.00	161.00	31.76	**68.24**	56-80
4.75	108.00	269.00	53.06	**46.94**	38-54
2.36	95.00	364.00	71.79	**28.21**	28-42
0.300	79.00	443.00	87.38	**12.62**	7-21
0.075	31.00	474.00	93.49	**6.51**	2-8
Pan	33.00	507.00	100.00	**0.00**	---

3. **Properties of DBM (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**950**	900
2	Marshall Flow at 60°C, mm.	**3.01**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/DBM10 Date: 28-07-2023

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}

Ref.: Material testing/PMC/21-22,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A.Type of Construction : **Dense Graded Bituminous Macadam.**

Location: Nitte Meenakshi College Road From Railway Gate Ch-952.90 m to 1093.40m

1. BITUMEN EXTRACTION TEST – DBM

TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	550.00
2	Weight of the Sample After Extraction, gm	S2	526.00
3	Initial weight of Filter paper, gm	F1	5.00
4	Final weight of Filter paper, gm	F2	6.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	4.55

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. **Gradation Test** – Extraction Sample

TABLE 2.1

Sample C1 **DBM** = Total Weight of the Sample (gm) : 526.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)**
37.5	0.00	0.00	0.00	**100.00**	100
26.5	51.00	51.00	9.70	**90.30**	90-100
19.0	79.00	130.00	24.71	**75.29**	71-95
13.20	84.00	214.00	40.68	**59.32**	56-80
4.75	99.00	313.00	59.51	**40.49**	38-54
2.36	57.00	370.00	70.34	**29.66**	28-42
0.300	98.00	468.00	88.97	**11.03**	7-21
0.075	38.00	506.00	96.20	**3.80**	2-8
Pan	20.00	526.00	100.00	**0.00**	---

3. **Properties of DBM (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1079**	900
2	Marshall Flow at 60°C, mm.	**3.24**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/DBM11

Date: 31-07-2023

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A.Type of Construction : **Dense Graded Bituminous Macadam.**
Location: Nitte Meenakshi College Road From Railway Gate Ch-1093.40 m to 1215.40m

1. BITUMEN EXTRACTION TEST – DBM
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	525.00
2	Weight of the Sample After Extraction, gm	S2	502.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	4.57

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore

2. **Gradation Test** – Extraction Sample

TABLE 2.1

Sample C1 **DBM** = Total Weight of the Sample (gm) : 502.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)**
37.5	0.00	0.00	0.00	**100.00**	100
26.5	24.00	24.00	4.78	**95.22**	90-100
19.0	105.00	129.00	25.70	**74.30**	71-95
13.20	80.00	209.00	41.63	**58.37**	56-80
4.75	91.00	300.00	59.76	**40.24**	38-54
2.36	57.00	357.00	71.12	**28.88**	28-42
0.300	93.00	450.00	89.64	**10.36**	7-21
0.075	35.00	485.00	96.61	**3.39**	2-8
Pan	17.00	502.00	100.00	**0.00**	---

3. **Properties of DBM (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1086**	900
2	Marshall Flow at 60°C, mm.	**3.41**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/DBM12 Date: 01-08-2023

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A.Type of Construction : **Dense Graded Bituminous Macadam.**
Location: Nitte Meenakshi College Road From Railway Gate Ch-1215.40 m to 1420.10m

1. BITUMEN EXTRACTION TEST – DBM
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	510.00
2	Weight of the Sample After Extraction, gm	S2	488.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	4.51

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone

2. **Gradation Test** – Extraction Sample

TABLE 2.1

Sample C1 **DBM** = Total Weight of the Sample (gm) : 488.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)**
37.5	0.00	0.00	0.00	**100.00**	100
26.5	38.00	38.00	7.79	**92.21**	90-100
19.0	85.00	123.00	25.20	**74.80**	71-95
13.20	73.00	196.00	40.16	**59.84**	56-80
4.75	85.00	281.00	57.58	**42.42**	38-54
2.36	51.00	332.00	68.03	**31.97**	28-42
0.300	89.00	421.00	86.27	**13.73**	7-21
0.075	31.00	452.00	92.62	**7.38**	2-8
Pan	36.00	488.00	100.00	**0.00**	---

3. **Properties of DBM (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1159**	900
2	Marshall Flow at 60°C, mm.	**2.47**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/DBM13 **Date: 02-08-2023**

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A.Type of Construction : **Dense Graded Bituminous Macadam.**
Location: Nitte Meenakshi College Road From Railway Gate Ch-1420.10 m to 1568.60m

1. BITUMEN EXTRACTION TEST – DBM
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	535.00
2	Weight of the Sample After Extraction, gm	S2	512.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	4.49

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. **Gradation Test** – Extraction Sample

TABLE 2.1

Sample C1 **DBM** = Total Weight of the Sample (gm) : 512.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)**
37.5	0.00	0.00	0.00	**100.00**	100
26.5	31.00	31.00	6.05	**93.95**	90-100
19.0	84.00	115.00	22.46	**77.54**	71-95
13.20	68.00	183.00	35.74	**64.26**	56-80
4.75	91.00	274.00	53.52	**46.48**	38-54
2.36	36.00	310.00	60.55	**39.45**	28-42
0.300	112.00	422.00	82.42	**17.58**	7-21
0.075	68.00	490.00	95.70	**4.30**	2-8
Pan	22.00	512.00	100.00	**0.00**	---

3. **Properties of DBM (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1096**	900
2	Marshall Flow at 60°C, mm.	**3.21**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/DBM14 Date: 02-08-2023

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A.Type of Construction : **Dense Graded Bituminous Macadam.**
Location: Nitte Meenakshi College Road From Railway Gate Ch-1568.60 m to 1702.00m

1. BITUMEN EXTRACTION TEST – DBM
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	550.00
2	Weight of the Sample After Extraction, gm	S2	526.00
3	Initial weight of Filter paper, gm	F1	5.00
4	Final weight of Filter paper, gm	F2	6.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	4.55

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore

2. **Gradation Test** – Extraction Sample

TABLE 2.1

Sample C1 **DBM** = Total Weight of the Sample (gm) : 526.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)**
37.5	0.00	0.00	0.00	**100.00**	100
26.5	49.00	49.00	9.32	**90.68**	90-100
19.0	87.00	136.00	25.86	**74.14**	71-95
13.20	75.00	211.00	40.11	**59.89**	56-80
4.75	81.00	292.00	55.51	**44.49**	38-54
2.36	56.00	348.00	66.16	**33.84**	28-42
0.300	124.00	472.00	89.73	**10.27**	7-21
0.075	39.00	511.00	97.15	**2.85**	2-8
Pan	15.00	526.00	100.00	**0.00**	---

3. **Properties of DBM (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**968**	900
2	Marshall Flow at 60°C, mm.	**3.09**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/DBM15 **Date: 03-08-2023**

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A.Type of Construction : **Dense Graded Bituminous Macadam.**
Location: Nitte Meenakshi College Road From Railway Gate Ch-1702.00 m to 1847.50m

1. BITUMEN EXTRACTION TEST – DBM
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	510.00
2	Weight of the Sample After Extraction, gm	S2	488.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	4.51

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Project Division
Yelahanka Zone
BBMP, Bangalore

2. **Gradation Test** – Extraction Sample

TABLE 2.1

Sample C1 **DBM** = Total Weight of the Sample (gm) : 488.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)**
37.5	0.00	0.00	0.00	**100.00**	100
26.5	26.00	26.00	5.33	**94.67**	90-100
19.0	91.00	117.00	23.98	**76.02**	71-95
13.20	73.00	190.00	38.93	**61.07**	56-80
4.75	90.00	280.00	57.38	**42.62**	38-54
2.36	62.00	342.00	70.08	**29.92**	28-42
0.300	85.00	427.00	87.50	**12.50**	7-21
0.075	34.00	461.00	94.47	**5.53**	2-8
Pan	27.00	488.00	100.00	**0.00**	---

3. **Properties of DBM (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1058**	900
2	Marshall Flow at 60°C, mm.	**3.25**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/DBM16 **Date: 04-08-2023**

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A.Type of Construction : **Dense Graded Bituminous Macadam.**
Location: Nitte Meenakshi College Road From Railway Gate Ch-1847.50 m to 1967.50m

1. BITUMEN EXTRACTION TEST – DBM
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	535.00
2	Weight of the Sample After Extraction, gm	S2	511.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	4.67

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Asst. Executive Engineer
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Yelahanka Zone
BBMP, Bangalore - 92

2. **Gradation Test** – Extraction Sample

TABLE 2.1

Sample C1 **DBM** = Total Weight of the Sample (gm) : 511.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)**
37.5	0.00	0.00	0.00	**100.00**	100
26.5	25.00	25.00	4.89	**95.11**	90-100
19.0	79.00	104.00	20.35	**79.65**	71-95
13.20	70.00	174.00	34.05	**65.95**	56-80
4.75	76.00	250.00	48.92	**51.08**	38-54
2.36	59.00	309.00	60.47	**39.53**	28-42
0.300	95.00	404.00	79.06	**20.94**	7-21
0.075	81.00	485.00	94.91	**5.09**	2-8
Pan	26.00	511.00	100.00	**0.00**	---

3. **Properties of DBM (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1075**	900
2	Marshall Flow at 60°C, mm.	**2.62**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/DBM17

Date: 05-08-2023

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}

Ref.: Material testing/PMC/21-22,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A.Type of Construction : **Dense Graded Bituminous Macadam.**

Location: Nitte Meenakshi College Road From Railway Gate Ch-1967.50 m to 2099.40m

1. BITUMEN EXTRACTION TEST – DBM

TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	550.00
2	Weight of the Sample After Extraction, gm	S2	526.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	4.55

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Asst. Executive Engineer
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Yelahanka Zone
BBMP, Bangalore - 92

2. **Gradation Test** – Extraction Sample

TABLE 2.1

Sample C1 **DBM** = Total Weight of the Sample (gm) : 526.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)**
37.5	0.00	0.00	0.00	**100.00**	100
26.5	33.00	33.00	6.27	**93.73**	90-100
19.0	115.00	148.00	28.14	**71.86**	71-95
13.20	70.00	218.00	41.44	**58.56**	56-80
4.75	89.00	307.00	58.37	**41.63**	38-54
2.36	57.00	364.00	69.20	**30.80**	28-42
0.300	98.00	462.00	87.83	**12.17**	7-21
0.075	49.00	511.00	97.15	**2.85**	2-8
Pan	15.00	526.00	100.00	**0.00**	---

3. **Properties of DBM (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**991**	900
2	Marshall Flow at 60°C, mm.	**3.26**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/BB1 Date: 01-08-2023

1. TEST REPORT ON BITUMEN SAMPLE:

Sub: Testing of Bitumen sample VG-30 Grade.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.
Technical Reference: Ministry of Road Transport and Highways, V Revision, 2013 and IS 73: 1992.

TABLE 1.1 ;

SL No	Details	Test Results	Requirements as per I.S 73 –1992 Specifications
1.	Penetration at 25^0 C	**48.90^0 C**	Min. 45
2.	Ductility Value at 25^0 C	**112.0 cm**	40
3.	Flash point	**239^0 C**	Minimum 220^0 C
4.	Softening point	**50.40^0 C**	Min. 47

. The result of the materials tested meets the standards and hence can be used for the work Nitte Meenakshi College Road From Railway Gate Ch-0.00 m to 2.60m

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Asst. Executive Engineer
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Yelahanka Zone
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NC/QC/YPD/2023-24/NM-2-/CB1 **Date: 01-08-2023**

1. TEST REPORT ON COARSE AGGREGATE:

Sub: Testing of Coarse Aggregate used in Bituminous Concrete.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TABLE 1.1 ;

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**23.45 %**	Not more than 24.00 %
2.	Combined Flakiness and Elongation index, %	**29.71 %**	Not more than 35.0 %
3.	Water absorption, %	**0.44 %**	Not more than 2.0 %
4.	Specific gravity	**2.61**	-------
5.	Soundness	**6.06 %**	Max. 12 % in Sodium Sulphate

. The result of the materials tested meets the standards and hence can be used for the work Nitte Meenakshi College Road From Railway Gate Ch-0.00 m to 2.60m

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Asst. Executive Engineer
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Yelahanka Zone
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NC/QC/YPD/2023-24/NM-2-/BC1 **Date: 02-08-2023**

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**
Location: Nitte Meenakshi College Road From Railway Gate Ch-0.00 m to 2.60m

1. BITUMEN EXTRACTION TEST – BC
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	500.00
2	Weight of the Sample After Extraction, gm	S2	473.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	5.60

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. **Gradation Test** – Extraction Test

TABLE 2.1

Sample C1 BC = Total Weight of the Sample (gm) : 473.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)**
19.0	0.00	0.00	0.00	**100.00**	100
13.2	21.00	21.00	4.44	**95.56**	90-100
9.5	108.00	129.00	27.27	**72.73**	70-88
4.75	87.00	216.00	45.67	**54.33**	53-71
2.36	41.00	257.00	54.33	**45.67**	42-58
1.18	45.00	302.00	63.85	**36.15**	34-48
0.600	30.00	332.00	70.19	**29.81**	26-38
0.300	39.00	371.00	78.44	**21.56**	18-28
0.150	41.00	412.00	87.10	**12.90**	12-20
0.075	25.00	437.00	92.39	**7.61**	4-10
Pan	36.00	473.00	100.00	**0.00**	---

3. **Properties of BC (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1226**	900
2	Marshall Flow at 60°C, mm.	**3.12**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/BC2 **Date: 02-08-2023**

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}

Ref.: Material testing/PMC/21-22,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**
Location: Nitte Meenakshi College Road From Railway Gate Ch-2.60 m to 213.30m

1. BITUMEN EXTRACTION TEST – BC

TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	525.00
2	Weight of the Sample After Extraction, gm	S2	497.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	5.52

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore

2. **Gradation Test** – Extraction Test

TABLE 2.1

Sample C1 **BC** = Total Weight of the Sample (gm) : 497.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)**
19.0	0.00	0.00	0.00	**100.00**	100
13.2	32.00	32.00	6.44	**93.56**	90-100
9.5	105.00	137.00	27.57	**72.43**	70-88
4.75	73.00	210.00	42.25	**57.75**	53-71
2.36	48.00	258.00	51.91	**48.09**	42-58
1.18	32.00	290.00	58.35	**41.65**	34-48
0.600	21.00	311.00	62.58	**37.42**	26-38
0.300	49.00	360.00	72.43	**27.57**	18-28
0.150	41.00	401.00	80.68	**19.32**	12-20
0.075	62.00	463.00	93.16	**6.84**	4-10
Pan	34.00	497.00	100.00	**0.00**	---

3. **Properties of BC (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1284**	900
2	Marshall Flow at 60°C, mm.	**3.61**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone

NC/QC/YPD/2023-24/NM-2-/BC3 **Date: 03-08-2023**

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**
Location: Nitte Meenakshi College Road From Railway Gate Ch-213.30 m to 501.30m

1. BITUMEN EXTRACTION TEST – BC
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	500.00
2	Weight of the Sample After Extraction, gm	S2	474.00
3	Initial weight of Filter paper, gm	F1	5.00
4	Final weight of Filter paper, gm	F2	6.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	5.40

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Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore

2. **Gradation Test** – Extraction Test

TABLE 2.1

Sample C1 BC = Total Weight of the Sample (gm) : 474.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)**
19.0	0.00	0.00	0.00	**100.00**	100
13.2	19.00	19.00	4.01	**95.99**	90-100
9.5	93.00	112.00	23.63	**76.37**	70-88
4.75	80.00	192.00	40.51	**59.49**	53-71
2.36	72.00	264.00	55.70	**44.30**	42-58
1.18	49.00	313.00	66.03	**33.97**	34-48
0.600	17.00	330.00	69.62	**30.38**	26-38
0.300	44.00	374.00	78.90	**21.10**	18-28
0.150	34.00	408.00	86.08	**13.92**	12-20
0.075	37.00	445.00	93.88	**6.12**	4-10
Pan	29.00	474.00	100.00	**0.00**	---

3. **Properties of BC (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1150**	900
2	Marshall Flow at 60°C, mm.	**3.55**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/BC4 Date: 03-08-2023

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}

Ref.: Material testing/PMC/21-22,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**

Location: Nitte Meenakshi College Road From Railway Gate Ch-501.30 m to 678.90m

1. BITUMEN EXTRACTION TEST – BC

TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	550.00
2	Weight of the Sample After Extraction, gm	S2	521.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	5.45

NEWZEN CONSULTANTS Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. **Gradation Test** – Extraction Test

TABLE 2.1

Sample C1 **BC** = Total Weight of the Sample (gm) : 521.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)**
19.0	0.00	0.00	0.00	**100.00**	100
13.2	32.00	32.00	6.14	**93.86**	90-100
9.5	80.00	112.00	21.50	**78.50**	70-88
4.75	69.00	181.00	34.74	**65.26**	53-71
2.36	51.00	232.00	44.53	**55.47**	42-58
1.18	67.00	299.00	57.39	**42.61**	34-48
0.600	59.00	358.00	68.71	**31.29**	26-38
0.300	63.00	421.00	80.81	**19.19**	18-28
0.150	29.00	450.00	86.37	**13.63**	12-20
0.075	35.00	485.00	93.09	**6.91**	4-10
Pan	36.00	521.00	100.00	**0.00**	---

3. **Properties of BC (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1319**	900
2	Marshall Flow at 60°C, mm.	**3.89**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka

NC/QC/YPD/2023-24/NM-2-/BC5

Date: 04-08-2023

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**
Location: Nitte Meenakshi College Road From Railway Gate Ch-678.90 m to 922.90m

1. BITUMEN EXTRACTION TEST – BC
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	600.00
2	Weight of the Sample After Extraction, gm	S2	568.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	5.50

NEWZEN CONSULTANTS Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore-92

2. **Gradation Test** – Extraction Test

TABLE 2.1

Sample C1 **BC** = Total Weight of the Sample (gm) : 568.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)**
19.0	0.00	0.00	0.00	**100.00**	100
13.2	35.00	35.00	6.16	**93.84**	90-100
9.5	102.00	137.00	24.12	**75.88**	70-88
4.75	69.00	206.00	36.27	**63.73**	53-71
2.36	97.00	303.00	53.35	**46.65**	42-58
1.18	49.00	352.00	61.97	**38.03**	34-48
0.600	55.00	407.00	71.65	**28.35**	26-38
0.300	51.00	458.00	80.63	**19.37**	18-28
0.150	32.00	490.00	86.27	**13.73**	12-20
0.075	27.00	517.00	91.02	**8.98**	4-10
Pan	51.00	568.00	100.00	**0.00**	---

3. **Properties of BC (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1255**	900
2	Marshall Flow at 60°C, mm.	**3.24**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANTS Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore

NC/QC/YPD/2023-24/NM-2-/BC6

Date: 04-08-2023

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**
Location: Nitte Meenakshi College Road From Railway Gate Ch-922.90 m to 1215.40m

1. BITUMEN EXTRACTION TEST – BC
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	550.00
2	Weight of the Sample After Extraction, gm	S2	521.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	5.45

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. **Gradation Test** – Extraction Test

TABLE 2.1

Sample C1 **BC** = Total Weight of the Sample (gm) : 521.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)**
19.0	0.00	0.00	0.00	**100.00**	100
13.2	39.00	39.00	7.49	**92.51**	90-100
9.5	65.00	104.00	19.96	**80.04**	70-88
4.75	96.00	200.00	38.39	**61.61**	53-71
2.36	68.00	268.00	51.44	**48.56**	42-58
1.18	50.00	318.00	61.04	**38.96**	34-48
0.600	63.00	381.00	73.13	**26.87**	26-38
0.300	42.00	423.00	81.19	**18.81**	18-28
0.150	29.00	452.00	86.76	**13.24**	12-20
0.075	49.00	501.00	96.16	**3.84**	4-10
Pan	20.00	521.00	100.00	**0.00**	---

3. **Properties of BC (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1107**	900
2	Marshall Flow at 60°C, mm.	**2.91**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/BC7 **Date: 05-08-2023**

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.

{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}

Ref.: Material testing/PMC/21-22,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**

Location: Nitte Meenakshi College Road From Railway Gate Ch-1215.40 m to 1420.10m

1. BITUMEN EXTRACTION TEST – BC

TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	525.00
2	Weight of the Sample After Extraction, gm	S2	497.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	5.52

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. **Gradation Test** – Extraction Test

TABLE 2.1

Sample C1 **BC** = Total Weight of the Sample (gm) : 497.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)**
19.0	0.00	0.00	0.00	**100.00**	100
13.2	38.00	38.00	7.65	**92.35**	90-100
9.5	84.00	122.00	24.55	**75.45**	70-88
4.75	79.00	201.00	40.44	**59.56**	53-71
2.36	70.00	271.00	54.53	**45.47**	42-58
1.18	53.00	324.00	65.19	**34.81**	34-48
0.600	36.00	360.00	72.43	**27.57**	26-38
0.300	24.00	384.00	77.26	**22.74**	18-28
0.150	46.00	430.00	86.52	**13.48**	12-20
0.075	35.00	465.00	93.56	**6.44**	4-10
Pan	32.00	497.00	100.00	**0.00**	---

3. **Properties of BC (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1148**	900
2	Marshall Flow at 60°C, mm.	**2.39**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore-92

NC/QC/YPD/2023-24/NM-2-/BC8 Date: 07-08-2023

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**
Location: Nitte Meenakshi College Road From Railway Gate Ch-1420.10 m to 1598.60m

1. BITUMEN EXTRACTION TEST – BC
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	540.00
2	Weight of the Sample After Extraction, gm	S2	511.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	5.56

NEWZEN CONSULTANTS Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. **Gradation Test** – Extraction Test

TABLE 2.1

Sample C1 BC = Total Weight of the Sample (gm) : 511.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)**
19.0	0.00	0.00	0.00	**100.00**	100
13.2	21.00	21.00	4.11	**95.89**	90-100
9.5	67.00	88.00	17.22	**82.78**	70-88
4.75	93.00	181.00	35.42	**64.58**	53-71
2.36	78.00	259.00	50.68	**49.32**	42-58
1.18	55.00	314.00	61.45	**38.55**	34-48
0.600	49.00	363.00	71.04	**28.96**	26-38
0.300	32.00	395.00	77.30	**22.70**	18-28
0.150	41.00	436.00	85.32	**14.68**	12-20
0.075	52.00	488.00	95.50	**4.50**	4-10
Pan	23.00	511.00	100.00	**0.00**	---

3. **Properties of BC (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1251**	900
2	Marshall Flow at 60°C, mm.	**3.76**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore-92

NC/QC/YPD/2023-24/NM-2-/BC9 **Date: 07-08-2023**

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**
Location: Nitte Meenakshi College Road From Railway Gate Ch-1598.60 m to 1743.50m

1. BITUMEN EXTRACTION TEST – BC
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	510.00
2	Weight of the Sample After Extraction, gm	S2	483.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	5.49

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. **Gradation Test** – Extraction Test

TABLE 2.1

Sample C1 **BC** = Total Weight of the Sample (gm) : 483.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)**
19.0	0.00	0.00	0.00	**100.00**	100
13.2	11.00	11.00	2.28	**97.72**	90-100
9.5	89.00	100.00	20.70	**79.30**	70-88
4.75	52.00	152.00	31.47	**68.53**	53-71
2.36	65.00	217.00	44.93	**55.07**	42-58
1.18	90.00	307.00	63.56	**36.44**	34-48
0.600	35.00	342.00	70.81	**29.19**	26-38
0.300	48.00	390.00	80.75	**19.25**	18-28
0.150	31.00	421.00	87.16	**12.84**	12-20
0.075	39.00	460.00	95.24	**4.76**	4-10
Pan	23.00	483.00	100.00	**0.00**	---

3. **Properties of BC (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1217**	900
2	Marshall Flow at 60°C, mm.	**3.55**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/BC10 **Date: 08-08-2023**

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**
Location: Nitte Meenakshi College Road From Railway Gate Ch-1743.30 m to 1847.50m

1. BITUMEN EXTRACTION TEST – BC
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	550.00
2	Weight of the Sample After Extraction, gm	S2	521.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	5.45

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore

2. **Gradation Test** – Extraction Test

TABLE 2.1

Sample C1 **BC** = Total Weight of the Sample (gm) : 521.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)**
19.0	0.00	0.00	0.00	**100.00**	100
13.2	18.00	18.00	3.45	**96.55**	90-100
9.5	96.00	114.00	21.88	**78.12**	70-88
4.75	79.00	193.00	37.04	**62.96**	53-71
2.36	65.00	258.00	49.52	**50.48**	42-58
1.18	40.00	298.00	57.20	**42.80**	34-48
0.600	78.00	376.00	72.17	**27.83**	26-38
0.300	31.00	407.00	78.12	**21.88**	18-28
0.150	45.00	452.00	86.76	**13.24**	12-20
0.075	29.00	481.00	92.32	**7.68**	4-10
Pan	40.00	521.00	100.00	**0.00**	---

3. **Properties of BC (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1253**	900
2	Marshall Flow at 60°C, mm.	**3.47**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/BC11 Date: 09-08-2023

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}

Ref.: Material testing/PMC/21-22,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**

Location: Nitte Meenakshi College Road From Railway Gate Ch-1847.50m to 1937.50m

1. BITUMEN EXTRACTION TEST – BC

TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	530.00
2	Weight of the Sample After Extraction, gm	S2	502.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	5.47

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

2. **Gradation Test** – Extraction Test

TABLE 2.1

Sample C1 **BC** = Total Weight of the Sample (gm) : 502.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)**
19.0	0.00	0.00	0.00	**100.00**	100
13.2	32.00	32.00	6.37	**93.63**	90-100
9.5	88.00	120.00	23.90	**76.10**	70-88
4.75	63.00	183.00	36.45	**63.55**	53-71
2.36	71.00	254.00	50.60	**49.40**	42-58
1.18	49.00	303.00	60.36	**39.64**	34-48
0.600	45.00	348.00	69.32	**30.68**	26-38
0.300	55.00	403.00	80.28	**19.72**	18-28
0.150	35.00	438.00	87.25	**12.75**	12-20
0.075	42.00	480.00	95.62	**4.38**	4-10
Pan	22.00	502.00	100.00	**0.00**	---

3. **Properties of BC (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1255**	900
2	Marshall Flow at 60°C, mm.	**2.36**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work.

NEWZEN CONSULTANT Bangalore

Asst. Executive Engineer
Project Division
Yelahanka Zone
BBMP, Bangalore - 92

NC/QC/YPD/2023-24/NM-2-/BC12 Date: 09-08-2023

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**
Location: Nitte Meenakshi College Road From Railway Gate Ch-1937.50m to 1979.60m

1. BITUMEN EXTRACTION TEST – BC
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	500.00
2	Weight of the Sample After Extraction, gm	S2	474.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	5.40

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2. **Gradation Test** – Extraction Test

TABLE 2.1

Sample C1 **BC** = Total Weight of the Sample (gm) : 474.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)**
19.0	0.00	0.00	0.00	**100.00**	100
13.2	26.00	26.00	5.49	**94.51**	90-100
9.5	85.00	111.00	23.42	**76.58**	70-88
4.75	91.00	202.00	42.62	**57.38**	53-71
2.36	40.00	242.00	51.05	**48.95**	42-58
1.18	31.00	273.00	57.59	**42.41**	34-48
0.600	56.00	329.00	69.41	**30.59**	26-38
0.300	56.00	385.00	81.22	**18.78**	18-28
0.150	29.00	414.00	87.34	**12.66**	12-20
0.075	34.00	448.00	94.51	**5.49**	4-10
Pan	26.00	474.00	100.00	**0.00**	---

3. **Properties of BC (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1359**	900
2	Marshall Flow at 60°C, mm.	**2.67**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

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Asst. Executive Engineer
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NC/QC/YPD/2023-24/NM-2-/BC13 Date: 10-08-2023

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**
Location: Nitte Meenakshi College Road From Railway Gate Ch-1979.60 to 2049.60m

1. BITUMEN EXTRACTION TEST – BC
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	525.00
2	Weight of the Sample After Extraction, gm	S2	497.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	5.52

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2. **Gradation Test** – Extraction Test

TABLE 2.1

Sample C1 BC = Total Weight of the Sample (gm) : 497.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)**
19.0	0.00	0.00	0.00	**100.00**	100
13.2	46.00	46.00	9.26	**90.74**	90-100
9.5	81.00	127.00	25.55	**74.45**	70-88
4.75	68.00	195.00	39.24	**60.76**	53-71
2.36	62.00	257.00	51.71	**48.29**	42-58
1.18	48.00	305.00	61.37	**38.63**	34-48
0.600	53.00	358.00	72.03	**27.97**	26-38
0.300	36.00	394.00	79.28	**20.72**	18-28
0.150	34.00	428.00	86.12	**13.88**	12-20
0.075	41.00	469.00	94.37	**5.63**	4-10
Pan	28.00	497.00	100.00	**0.00**	---

3. **Properties of BC (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1308**	900
2	Marshall Flow at 60°C, mm.	**3.74**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

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NEW TECHNOLOGIES TO INNOVATE

NC/QC/YPD/2023-24/NM-2-/BC14 Date: 11-08-2023

1.TEST REPORT ON BITUMINOUS MIXES :

(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.

{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}

Ref.: Material testing/PMC/21-22,

Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**

Location: Nitte Meenakshi College Road From Railway Gate Ch-2049.60 to 2099.40m

1. BITUMEN EXTRACTION TEST – BC

TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	540.00
2	Weight of the Sample After Extraction, gm	S2	511.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	5.56

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2. **Gradation Test** – Extraction Test

TABLE 2.1

Sample C1 **BC** = Total Weight of the Sample (gm) : 511.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)**
19.0	0.00	0.00	0.00	**100.00**	100
13.2	28.00	28.00	5.48	**94.52**	90-100
9.5	66.00	94.00	18.40	**81.60**	70-88
4.75	82.00	176.00	34.44	**65.56**	53-71
2.36	96.00	272.00	53.23	**46.77**	42-58
1.18	59.00	331.00	64.77	**35.23**	34-48
0.600	32.00	363.00	71.04	**28.96**	26-38
0.300	25.00	388.00	75.93	**24.07**	18-28
0.150	21.00	409.00	80.04	**19.96**	12-20
0.075	55.00	464.00	90.80	**9.20**	4-10
Pan	47.00	511.00	100.00	**0.00**	---

3. **Properties of BC (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1264**	900
2	Marshall Flow at 60°C, mm.	**3.09**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

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Asst. Executive Engineer
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NC/QC/YPD/2023-24/NM-2-/BC15 Date: 11-08-2023

1.TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
{Project*: Improvements and Development and widening of road from National Highway to Railway Line via Nitte Meenakshi College Road till BBMP Limits.}
Ref.: Material testing/PMC/21-22,
Report Required for: Assistant Executive Engineer,
Yelahanka Project Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s SLP Infra Engineers Pvt Ltd, Prop: H.S Yashawanth Gowda.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**
Location: Presidency School Road From Doddaballapura Main Road Towards Amansara Layout CH : 780.00m to 810.00m

1. BITUMEN EXTRACTION TEST – BC
TABLE 1.1

Sl no.	Description	Index	C1
1	Weight of the Sample, gm	S1	520.00
2	Weight of the Sample After Extraction, gm	S2	492.00
3	Initial weight of Filter paper, gm	F1	4.00
4	Final weight of Filter paper, gm	F2	5.00
5	Difference in weight of Filter Paper, gm	F= F2-F1	1.00
6	Bitumen Content, %	$\frac{S1-S2+F}{S1} \times 100$	5.58

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2. **Gradation Test** – Extraction Test

TABLE 2.1

Sample C1 **BC** = Total Weight of the Sample (gm) : 492.00					
Sieve Size, mm	**Weight Retained (gm)**	**Cumulative Weight Retained (gm)**	**Cumulative % of Retained**	**Cumulative % of Passing**	**Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)**
19.0	0.00	0.00	0.00	**100.00**	100
13.2	39.00	39.00	7.93	**92.07**	90-100
9.5	66.00	105.00	21.34	**78.66**	70-88
4.75	84.00	189.00	38.41	**61.59**	53-71
2.36	62.00	251.00	51.02	**48.98**	42-58
1.18	53.00	304.00	61.79	**38.21**	34-48
0.600	30.00	334.00	67.89	**32.11**	26-38
0.300	27.00	361.00	73.37	**26.63**	18-28
0.150	39.00	400.00	81.30	**18.70**	12-20
0.075	59.00	459.00	93.29	**6.71**	4-10
Pan	33.00	492.00	100.00	**0.00**	---

3. **Properties of BC (Gr-2) Mix** - Stability of Bituminous Mix

Sl. No.	**Test Property**	***Test results obtained by Marshall method**	**Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications**
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1298**	900
2	Marshall Flow at 60°C, mm.	**3.17**	2.0 - 4.0

The result of the materials tested meets the standards and hence can be used for the work

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Asst. Executive Engineer
Project Division
Yelahanka Zone
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